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THE MEDICAL ASSOCIATION OF GEORGIA *will convene in the city of Savannah at its next—the Thirty-sixth—Annual Session; on the third Wednesday in April* (15*th*), 1885.

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PRIZE ESSAYS FOR 1884-'85.

At the last meeting of the Medical Association of Georgia, the Committee on Prize Essays was authorized to award a prize of fifty dollars to the best essay on any subject connected with the practice of medicine, surgery, obstetrics or hygiene—provided one be found worthy of a prize.

Each essay must be accompanied by a sealed packet, on which shall be written some motto or sentence, and within which shall be inclosed the author's name and residence. The same motto or sentence is to be written on the essay to which the packet is attached.

Any clew by which the authorship of an essay is made known to the committee will debar such essay from competition.

Competition for this prize is open to all regular physicians practicing in Georgia.

All essays must be sent to Dr. R. J. Nunn, Chairman Committee on Prize Essays, Savannah, Georgia. All essays must be sent on or before March 10th, 1885.

In behalf of Committee on Prize Essays.

R. J. NUNN, M. D.,
Chairman.

MINUTES

OF THE

MEDICAL ASSOCIATION

OF GEORGIA.

Thirty-Fifth Annual Session.

FIRST DAY—MORNING SESSION.

MACON, GA., April 16th, 1884.

The Medical Association of Georgia convened this day at 11 o'clock, in the court house, and was called to order by the retiring president, Dr. K. P. Moore, of Macon.

The exercises were opened with prayer by Rev. A. J. Battle, D.D., of Macon.

Dr. Wm. F. Holt, of Macon, in behalf of the Committee of Arrangements, made the address of welcome as follows:

Mr. President and Gentlemen of the Medical Association: The city of Macon but welcomes her own once more when she extends to the Medical Association of Georgia a sincere and cordial greeting. Thirty-five years have passed, years fraught with the vicissitudes of sorrow, suffering and renewed prosperity to many of our Southern homes, since in this city and in a hall across yonder street the Medical Association of Georgia was called into existence. In looking over this assembly, I note only a few of those who were present at that meeting and assisted in its organiza-

tion. They will give you whispers from the storehouses of their memories; will tell you with what serious doubts and misgivings, with what anxious solicitude they watched its growth and progress during the early years of its existence, how at times its early demise was seriously threatened, and confidently predicted, what incessant care and earnest attention were necessary to nourish the constantly flickering and ofttimes nearly extinguished flame of the little nurseling's life. But to-day, thanks to the unremitting exertion of the profession, we beheld it full grown, strong and vigorous, an institution worthy of our veneration and support.

It is then, gentlemen, with peculiar pride and pleasure that upon this the thirty-fifth anniversary of its existence, and in this city of its birth, that in behalf of the Committee of Arrangements and the medical profession of Macon, I extend to you a cordial greeting and a hearty welcome to our city and to our homes. Seven years have elapsed since we had the pleasure of greeting you in our midst. We are glad to see you and expect much pleasure from your visit, and sincerely wish each and all of you to feel at home—at liberty to go when and where your inclinations prompt you.

While we cannot show you a harbor filled with vessels, floating the representation of sails of almost every nation on the globe, nor to a canal bearing on its turbid waters the products of the country, nor to a state-house (that some of us think ought to be here) with its massive blocks of granite and marble, yet we do claim to possess the educational city of Georgia—a city of literary culture, of colleges and schools.

We will point you to Wesleyan—the oldest female college in the world—with its magnificent building and commanding location—a building, handsome not only in its exterior, but perfect in its internal arrangements and especially adapted to the health and comfort of the pupils; Mount de Sales, Appleton Home, Mercer University, with its distinguished Alumni, Georgia Academy for the Bliud, Pio Nono College, Orphan Home, numerous private schools, and then to our public schools, located in every section of the city, where an education can be obtained alike by the rich and the poor.

Each and all, we would cordially invite you to visit, feeling assured that you will find much to interest and amuse you.

With the hope that the present meeting will be a pleasant and harmonious one—one that will redound to the honor and interest of the entire profession—and that you will carry with you pleasing recollections of your sojourn with us, I bid you heartily welcome.

The President announced that Dr. L. B. Alexander, of Forsyth, would respond, in behalf of the Association, to the address of welcome; whereupon Dr. Alexander arose and said:

Mr. President—I arise, sir, in behalf of the Medical Association of the State of Georgia, to respond to the address of welcome and generous tender of the hospitalities of the city of Macon so handsomely offered by Dr. Holt.

In performing this pleasant duty I am pleased to say that we accept the offer with a hearty good will.

Some of us, who have labored long and earnestly in our noble calling, have known Macon long and well. We knew her before these stately walls of brick and mortar were erected. We knew her before she numbered half her present inhabitants. But, sir, we never knew her when she was not full of generosity, full of hospitality, full of energy and full of enterprise. Macon has always done her duty, and done it well and wisely.

Within a very recent period of time she has increased her borders, has pulled down her old structures and erected larger and more handsome ones in their places. Her numbers have doubled, and her territory of trade has reached out and out until she has become a commercial centre of strong proportions. Her magnitude of solid wealth has outstripped her most sanguine expectations.

While we would say this much and more of your proud city, we do not forget to say that the brotherhood of our noble profession here have kept pace with her progress and prosperity.

Not many years since you had in your midst a Harrison, a Greene, a Boone, a Pye, a Burgess and a Nottingham. These were a band of noble brethren, but they have long since gone to their reward, while their bodies sleep quietly and peacefully beside the banks of the ever-flowing Ocmulgee. But you still have prominent with you a Hammond, a Fitzgerald, a Holt, a Hall, a Stephens—and recently Moore has come among you, and a score of others of younger years who are able and willing to illustrate our noble calling.

Ours, sir, is a noble calling. It is second to none save the ministry. We feel that it was begun by Christ himself. Did he not by the aid of some anæsthetic agent cause a deep sleep to come upon Adam while he performed the first surgical operation? Did he not minister to the sick?

Did he not restore the palsied limb? Cleanse the leper? Cause the lame to walk; the dumb to speak, and the deaf to hear? Yea, verily, and from him it has been handed down from generation to generation all along through the ages, until to-day, now in the nineteenth century, we find ourselves following along in his footsteps, riding up and down through the earth, going from house to house, closing up the wounds, ministering to the afflicted, and I may add, binding up the broken-hearted.

We, sir, have gathered here from all parts of the State. We have come from the mountains, where the pure crystal fountains flow to make glad the weary, worn traveler in search of a better and a purer atmosphere—we have gathered from the beautiful Savannahs, where the magnolia and the bays load the air with their delightful fragrance. We have come from our Southland, where the plains stretch out in every direction. We have come from amongst the "Old Red Hills," where peace and contentment reign supreme. Yes, sir, we have come from all parts of our noble old State and have gathered ourselves together as with one mind and heart to receive knowledge and impart instruction. We have come for the advancement of science and art. We have come not only to discuss questions of material interest to our brotherhood, but we have come to see you, to shake hands with you and sit down in pleasant places to reason together as brethren. Yes, sir, we have come to do all these and more; we have come to eat your bread, and to drink your wine, and to look upon the faces of your beautiful women, who, like so many precious jewels, glitter all over the bosom of your beautiful Hill City. They are God's last, best and noblest gift to man, and the poet has fittingly said that:

"They were formed to bless the life of man
And share his care,
To soothe his breast when keen distress
Hath lodged a poisoned arrow there."

In conclusion now, sir, I will say that for this three days' session we are *yours* truly.

The Committee of Arrangements reported the following

PROGRAMME.

FIRST DAY—WEDNESDAY—MORNING.

Convene at the Court House at 11 o'clock.

Opening Exercises.—Prayer by Rev. A. J. Battle, D. D. Address of Welcome by Wm F. Holt, M. D., in behalf of the Committee of Arrange-

ments. President's Annual Address. Regular order. Adjournment at 1 o'clock.

Afternoon.—Convene at 3 o'clock. Regular order. Adjournment as the Association may determine.

Evening.—Convene at 8 o'clock. Exhibition by the Pupils of the Georgia Academy for the Blind.

SECOND DAY—THURSDAY—MORNING.

Convene at 10 o'clock. Regular order. Orator's Address by M. H. O'Daniel, M. D., at 12 o'clock.

Afternoon —Convene at 3 o'clock. Regular order. Adjournment as the Association may determine.

Evening.—Convene at 9:30 o'clock. Grand Banquet at Brown's Hotel.

THIRD DAY—FRIDAY—MORNING.

Convene at 10 o'clock. Regular order. Adjournment as the Association may determine.

Afternoon —Convene at 3 o'clock. Regular order. Adjournment as the Association may determine.

Dr. K. P. Moore, of Macon, the retiring President, then introduced the President-elect, Dr. A. W. Calhoun, of Atlanta, in the following address:

"Sixteen years ago, when I left the fostering care of my alma mater, and cast my frail barque upon the turbulent stream of a professional life, I felt like one upon a broad and expanseless sea without chart or compass. In the chilly darkness of that stormy period I naturally looked out for some friendly light-house along the shore. Across the breaking waves came the gleaming light of the Medical Association of Georgia, and to her inviting haven I bent my oars. Under her watch care I was kindly received, and for fifteen years I have annually looked forward to her coming sessions with pleasurable anticipations of no ordinary character. During those years the meeting with familiar faces, and the reunions which I have enjoyed, have been to me genuine annual love feasts. During those years, ties of friendship have been formed so strong and lasting that nothing will ever break, save the last great wave which shall lash each one of us in our turn upon the endless shores of eternity. During those years the association has several times seen fit to place me in positions of honor and trust, and now, in retiring from the highest

gift of honor within the gift of her membership, it is no meaningless expression of formality, when I return to you my most grateful acknowledgments for many kindnesses and courtesies of which I have been the honored recipient. To say that these many expressions of confidence have awakened within my bosom emotions of deepest and most profound gratitude is but a faint expression of my real feelings.

"When the history of our country shall have been fully written, each and every trade and profession will point with pride to some illustrious names which shall adorn the pages of that history. It gives me peculiar pleasure to introduce to you to-day, as my successor in office, one in whom the medical profession of Georgia feels a just and special pride—one, the mention of whose name brings emotions of gratitude to many a heart throughout this broad sunny land of ours; one through whose skillful touches the dark shades of a long dreary night, have been driven away, and through the visual windows the beautiful scenes of a new-born world have been let in upon many a benighted soul—a ripe scholar, a cultured gentleman and a public benefactor, in honoring whom the Medical Association of Georgia has honored itself—Dr. A. W. Calhoun, of Atlanta, Ga."

Dr. Calhoun then proceeded to deliver the annual address. [Appendix.]

The Committee of Arrangements reported the following gentlemen present, duly registered and entitled to participate in the deliberations of the Association.

[Names of new members were subsequently added. *Sec.*]

A. W. Calhoun, R. J. Nunn, G. W. Mulligan, L. B. Alexander, Wm. Perrin Nicolson, Jno. B. Roberts, John W. Janes, H. F. Scott, Wm. F. Holt, H. McHatton, Mark H. O'Daniel, S. B Hawkins, John Gerdine, C. H. Hall, H. J. Williams, E. G. Ferguson, J. P. Stevens, H. V. Johnson, J. C. Johnson, P. H. Wright, W. B. Parks, W. A. Carlton, T. F. Walker, A. R. Taylor, C. W. Hickman, A. Mathis, J. G. Slappy, E. L. Bardwell, Y. H. Morgan, L. M. Jones, James A. Gray, J. McF. Gaston, W. Z. Holliday, J. D. Wright, Eugene Foster, W. B.

Mathews, J. W. Flanders, T. J. Mitchell, J. F. Fielder, B. L. Ross, W. C. Gibson, R. B. Barron, C. C. Quillian, J. F. Lancaster, T. J. Kelly, H. L. Howard, Charles Hicks, J. D. Herrman, N. G. Gewinner, J. R. Henderson, W. A. Rosser, J. C. Solomon, Wesley King, J. L. Walker, E. J. Denson, R. H. Hightower, D. W. Hammond, K. P. Moore, N. P. Jelks, C. D. Smith, M. G. Hatch, V. H. Taliaferro, F. M. Jordan, James A. Fort, W. O. Daniel, W. B. Wells, J. M. Hull, D. T. Nash, B. L. Joiner, T. R. Whitley, G. G. Roy, J. H. Redding, J. M. Head, John Thad. Johnson, C. L. Sample, R. M. Brown, T. M. McIntosh, W. F. Westmoreland, T. D. Walker, Kenan Hall, J. Emmett Blackshear, A. J. Logan, J. H. Duggan, Wm. J. Toole, J. H. Heard, J. F. Cole, E. B. Ilyus, T. L. Raines, J. A. Beasley, W. R. Winchester, E. K. Bozeman, A. A. Smith, Wm. Abram Love, W. A. J. Anderson, Thos. H. Kenan.

By Dr. T. F. Walker:

Resolved, That visiting physicians, the clergy and representatives of the press be invited to seats on the floor.

Adopted.

By Dr. C. W. Hickman:

Resolved, That to the members of the various Faculties in Macon, invitations to seats on the floor be extended during the session of the Association.

Adopted.

The Secretary read a letter from Dr. Jos. P. Logan, of Atlanta, expressing regrets at not being present.

The following invitation was read by the Secretary:

MACON, GA., April 16, 1884.

To the Medical Association of Georgia:

GENTLEMEN:—You are most cordially invited to witness an exhibition of the pupils of the Georgia Academy for the Blind this evening at the

Chapel of the Institution; exercises to begin at 8 o'clock. The members of the Association not only are invited but they are authorized and requested to bring with them ladies or other friends that they may wish to invite.

Very respectfully,

W. D. WILLIAMS, *Principal.*

On motion of Dr. L. M. Jones the invitation was accepted with the thanks of the Association.

Reports of Special Committees being in order, the report of the Committee on the Inebriate Asylum was called.

The Secretary presented the following letter from Dr. Joseph P. Logan, chairman of the committee:

ATLANTA, GA., April 15, 1884.

James A. Gray, M. D., Secretary Medical Association of Georgia:

DEAR SIR:—Please convey my regret that I am unable to attend the meeting of the Association to be held in the city of Macon, and also present the statement that I endeavored to obtain some favorable action from the Legislature of Georgia in regard to the establishment of an Inebriate Asylum in accordance with the direction of the Association. Though this effort was seconded by various parties who were members of that body, it was without avail, and I am fully satisfied that there is no ground whatever for hope that any additional effort would be attended with a more favorable result.

Very respectfully, your obedient servant,

JOSEPH P. LOGAN,

Chairman Committee on Inebriate Asylum.

By Dr. R. J. Nunn:

Resolved, That the report of Dr. Logan be received and accepted, and that the committee be discharged.

Adopted.

Dr. H. V. M. Miller, Chairman of the Committee on Expert Testimony, stated that he had prepared no written report, because he was not aware that he was chairman of the committee until recently. He stated that he was satisfied that the Association could not get the Legislature to

enact such a law as they desired. He suggested that possibly the Legislature might be induced to pass an act leaving the compensation paid all experts to the judges trying the cause. He further suggested that the committee be continued, and make renewed efforts to obtain the passage of such a law.

Dr. Miller, as Chairman of the Committee on Anatomical Material, made a verbal report as follows:

A bill was prepared and presented to the Legislature providing anatomical material for dissecting purposes, and passed both Houses, but was vetoed by the Governor too late to have been passed by a two-thirds vote, even if it could have been. It was vetoed after the adjournment of the Legislature. I have never seen any reason given by the Governor for this veto. I learn that he stated as his reason that the law requiring that the bodies of strangers be delivered to the colleges in twenty-four hours did not give long enough for the identification and claiming of such bodies.

When the next Legislature assembled the bill was again introduced and lost. We therefore can report no law as yet.

On motion of Dr. W. D. Bizzell the Committees on Expert Testimony and Anatomical Material were continued.

The Board of Censors reported favorably upon the applications for membership of Drs. R. H. Hightower, Dublin; W. C. Gibson, Macon; J. Weichelbaum, Savannah; C. J. J. Hicks, Dublin; J. W. Flanders, Wrightsville; J. R. Henderson, Sun Hill; J. L. Walker, Wrightsville; T. J. Kelly, Tennille; W. Z. Holliday, Harlem; W. B. Matthews, Fort Valley; J. McF. Gaston, Atlanta; J. F. Lancaster, Atlanta; C. C. Quillian, Atlanta; H. L. Howard, Macon; J. C. Solomon, Bullards; B. L. Ross, Fort Valley; W. King, Irwinton; R. B. Barron, Clinton; E. J. Denson, Jeffersonville; W. A. Rosser, Bolingbroke; T. J. Mitchell, Griffin; J. F. Fielder, Irwinton; J. D. Wright, Louisville; I. D. Herman,

Eastman; Geo. C. Hummel, Savannah; N. G. Gewinner, Macon.

Adopted.

FIRST DAY—AFTERNOON SESSION.

The Association was called to order at 3 o'clock, by the President.

The following report of the Committee on Publication was read and referred to the Auditing Committee, consisting of Drs. R. J. Nunn, Eugene Foster, and Wm. F. Holt;

To the President and Members of Medical Association of Georgia:

GENTLEMEN: —Soon after the adjournment of the last session, the Secretary asked for bids from our several publishing houses in Atlanta for publishing the volume of Transactions. These bids were submitted to the Publication Committee and the contract awarded to Messrs. Jas. P. Harrison & Co. How well they have done their work you can judge.

Knowing that the condition of the Treasury of the Association was not plethoric, I felt that if I could get a few unobjectionable advertisements it would reduce the cost of the Transactions. Without the help of these advertisements we could not have published the Transactions in the style in which they were published.

The account for postage may seem large to you, but when you know that over one thousand letters and several hundred postal cards were sent to physicians not members, urging them to attend this meeting and identify themselves with the Association, it will readily explain itself.

I have collected as follows:

Cash from advertisements	$230 50
" Treasurer	175 00
" Dues collected	27 00
" Sale President's address	15 00
" Sales Transactions	10 64
	$458 14

The following amounts have been expended:

Postage on Transactions	$ 50 10
Cash on letters, postal cards, etc	34 49
Express	3 50
Secretary's expenses, Athens	10 50
Bank for collecting drafts	1 00
Incidentals	1 80
Amount paid for printing	356 75
	$458 14

JAMES A. GRAY, *Chairman.*

Macon, April 16, 1884.

The Committee on Necrology, through the chairman, Dr Eugene Foster, made a report, which on motion, was received and adopted.

[Appendix.]

Dr. Eugene Foster, Chairman of the Committee on Prize Essays, submitted the following report:

To the President of the Medical Association of Georgia:

In behalf of the Committee on Prize Essays I would respectfully report that the essay presented, while able, and full of interest, yet is not such as to warrant award of prize.

The fund on hand at the last meeting was seventy-four dollars. By authority conferred at the last meeting this fund was put at interest and fully secured by collateral, the interest being seven per cent. per annum. This fund, principal and interest, now amounts to $79.18. If authorized so to do, your committee will pursue a like course during the coming year. The fund is here present for your direction. Any instructions from your honorable body will be faithfully complied with by your committee.

In behalf of Committee on Prize Essays,

EUGENE FOSTER.

MACON, GA., April 16, 1884. *Chairman.*

Dr. W. D. Bizzell stated that he thought that the committee should state in their announcement the subjects the

essays were to be written upon, and that there ought not to be more than two subjects.

The President stated that he thought the suggestion a good one, and that the same committee would be retained, and that they would offer the prizes as they deemed best.

By Dr. R. J. Nunn.

Resolved, That in view of the very great practical importance of the President's address to the public generally, it be published in the secular press of the State.

Adopted.

Under the call of sections from the several Congressional Districts, the following reports were presented by title, to be called up and read at the pleasure of the Association:

Dr. R J. Nunn: "Report of section on Gynecology for the First Congressional District."

Dr. Nunn gave a brief synopsis of his report, and exhibited a number of new instruments and appliances.

No report from Second District from any of the sections.

Dr. N. P. Jelks: "Report of Section on Practice of Medicine for the Third Congressional District."

This report was read by Dr. Jelks.

Dr. T. F. Walker, member of the Committee on Surgery for the Third Congressional District, stated that the Chairman was not present, but that he thought he would be to-morrow, but said he prepared papers on "Puerperal Peritonitis preceding Labor," "Hæmoptomesis in two days old infant," and "Vaginismus in a Multipara."

No report from either section of the Fourth Congressional District.

Dr. James A. Gray, Chairman of the section on Surgery for the Fifth Congressional District, stated that he had no report ready.

Dr. Nicolson, a member of the Committee, stated that he had prepared a paper on some Surgical cases and would present it to-morrow.

The Sixth Congressional District was called but there was no report ready.

On motion of Dr. Bizzell the Association adjourned to 10 o'clock Thursday morning.

SECOND DAY—MORNING SESSION.

MACON, GA., April 17, 1884.

The Association was called to order promptly at 10 o'clock.

The Secretary read letters and telegrams from various absent members, expressing regrets at not being present.

The following report of the Treasurer was read and referred to the Auditing Committee:

To the Medical Association of Georgia:

GENTLEMEN:—In submitting my annual report I must congratulate the Association upon its improved financial condition. During the year I have

Received from all sources	$755 08
Disbursed	628 78
Leaving a balance in the Treasury	$126 30

Itemized statements appear upon my books. We still owe a balance on the Transactions for 1883, the amount of which will appear in the Secretary's report.

There are a good many who have not paid for 1883 and about ten or twelve who are in arrears for several years and whose names will have to be dropped after this meeting.

If the members will only assist me by the *prompt* payment of dues when called upon, our Association will continue to flourish. After this year I

would suggest that the dues be decreased to $2.00, which suggestion I leave for your discussion.

Respectfully submitted,

E. C. GOODRICH,

MACON, GA., April 16, 1884. *Treasurer.*

Dr. T. F. Walker of the Third District read a report presented by title previously.

On motion of Dr. G. G. Roy, this report was referred to the section on Gynecology.

Dr. Nicolson, a member of the section on Surgery for the Fifth District, read a report previously presented by title.

Dr. V. H. Taliaferro, chairman of the section on Gynecology for the Fifth District, stated that he had report ready.

On motion of Dr. K. P. Moore, Dr. Taliaferro's report was made the special order for 3 o'clock this afternoon.

The hour having arrived for the orator's address, the President introduced the orator, Dr. M. H. O'Daniel, of Milledgeville, who delivered the address.

[The Secretary has been unable to obtain a copy of this address.]

On motion the Association adjourned to 3 o'clock, P. M.

SECOND DAY—AFTERNOON SESSION.

The Association was called to order at 3 o'clock by the President.

The Secretary read a number of letters and telegrams from absent members expressing regrets at not being present. He also read a letter from Dr. A. C. Perry, stating that he had forwarded a report on Practice of Medicine for the Sixth District.

[This report has never been received.—SEC.]

The President announced that the time set apart for Dr. Taliaferro had arrived, and that the Doctor would now make his report.

Dr. Taliaferro stated that he did not desire to read the report, but to give a brief synopsis of it and let it go to the Committee on Publication.

The report was illustrated by proper drawings.

Dr. Taliaferro presented a number of pessaries of his own device, which he said had given satisfaction in their use.

Dr. W. B. Wells submitted a report on Surgery for the Seventh District, which was referred to the Committee on Publication.

Dr. John Gerdine submitted a report on Practice of Medicine for the Ninth District, which was referred to the Committee on Publication without reading.

The Secretary read a telegram from Dr. P. L. Hilsman, stating that the death of a daughter prevented him from being present.

By Dr. Wm. F. Holt.

Resolved, That the sympathies of this Association be extended to Dr. Hilsman and family in their sad affliction.

Resolved, That the Secretary furnish Dr. Hilsman with a copy of these resolutions.

Adopted by a rising vote.

The President announced the Nominating Committee as follows: Drs. C. L. Sample, M. H. O'Daniel, W. A. Carlton, S. B. Hawkins, J. D. Wright, Chas. W. Hickman, E. J. Denson, G. W. Mulligan, W. Z. Holliday, John Thad. Johnson, W. F. Holt, J. F. Fielder, J. W. Flanders, J. B. Roberts, W. B. Wells, W. B. Mathews, C. G. G. Hicks, R. O. Engram, J. M. Head, C. D. Smith, T. M. McIntosh, T. S. Mitchell.

The call for voluntary contributions was then made and was responded to as follows:

Dr. A. G. Hobbs: "Jequirity, its use in the treatment of Granular Lids."

Dr. H. J. Williams: "A case of Empyæma successfully treated by free incisions, constant drainage and antiseptic injections--remarks."

Dr. J. M. Hull: "Extreme Age no contra-indication for Cataract Extractions, with Cases."

Dr. Eugene Foster: "Syphilis as a Sociological Problem. The opinions and statements of Mr. Herbert Spencer thereon reviewed."

Dr. J. P. Stevens: "Animal Fermentation."

Dr. W. B Parks: "A New Mammary Bandage."

Dr. J. W. Flanders: "Successful removal of Uterine Tumor per Vaginum." "Case of supposed superfœtation." "Case of immediate resection of the humerus with union and subsequent lengthening of the bone."

Dr. H. McHatton: "Propagation of Leprosy."

Dr. H. F. Scott: "Tobacco Amblyopia, with cases."

Dr. N. G. Gewinner: "Treatment of the Placentá after Abortion."

Dr. F. Eklund, Stockholm, Sweden, through Dr. H. F. Campbell: "Observations on the Essential Nature of Diabetes Mellitus Vulgaris."

Dr. E. G. Ferguson: "Nature's Laws."

Dr. Chas. W. Hickman: "Mitral Insufficiency."

Dr. J. McF. Gaston: "Explanation of the Pathology and Therapeutics of the diseases of the Nerve Centres—especially Epilepsy."

Dr. H. V. M. Miller: "The Effects of Altitude in the Treatment of Consumption."

Dr. T. M. McIntosh: "Cases in Surgery."

Dr. A. A. Smith: "Typhoid and Typho-Malarial Fevers and the Treatment with Acids and Gelsemium."

Dr. S. D. Brantley: "A Case of Resection of the Shaft of Humerus."

Dr. W. O'Daniel: "Plaster Paris Apparatus in the Treatment of Fractures."

Dr. K. P. Moore: "A plea for a more general use of Anæsthesia in Natural Labor, with some Physiological suggestions upon the rationale of its action as a reason therefor."

Dr. W. F. Westmoreland: "Should we use Plaster Paris splint in fractures accompanied with Contusions and Lacerations immediately after injury?"

Dr. Robt. Battey: "Antiseptics in Ovariotomy and Battey's Operation—30 cases without a death."

Dr. W. C. Gibson: "Two cases of Cilia Blephritis, associated with simple Hypermetropia and cured by correcting the Hypermetropia with proper glasses."

The Board of Censors reported favorably upon the applications for membership of Drs. J. H. Heard, Walden, J. F. Cole, Carrollton, E. B. Ilyus, Macon, R. O. Engram, Montezuma, W. R. Winchester, Macon, J. H. Duggan, Stephensville, W. J. Toole, Macon, J. A. Beasly, West Point, E. D. Alfriend, Sparta.

Adopted.

The secretary read a paper from Dr. Henry Gaither in reference to printing the Transactions in cheaper form and reducing the annual dues.

Dr. Nunn stated that the Transactions as now published were decidedly the most handsome of those published by any other State Association, and were well worth the annual dues of $3.00. Dr. Nunn then offered the following resolution:

Resolved, That a committee of three be appointed to consider the paper

of Dr. Gaither and that they report at the next meeting of the Association.

Dr. Bizzell stated that he saw no reason for this committee, that the dues are now remarkably low.

Dr. Miller said he favored Dr. Nunn's resolution, that he thought the communication deserved notice, and that a committee should be appointed to consider the matter.

The question was put and the motion adopted. The President appointed Drs. W. D. Bizzell, V. H. Taliaferro and R. J. Nunn on the committee.

On motion, Dr. Stevens was requested to read his paper that had previously been reported by title.

Dr. Stevens then read a lengthy paper which was discussed by Dr. Gaston and others.

Dr. Gaston said:

In regard to the use of the term anthrax to designate the disorder styled charbon by the French, I would draw attention to their distinguishing features.

The former is applied properly to the disease known amongst us as carbuncle, while the latter indicates the disorder recognized in this country as malignant pustule. Anthrax or carbuncle is the local inflammation resulting from a general derangement of the system, while charbon or malignant pustule is a constitutional disturbance of the organization growing out of a special local contamination.

The peculiar furuncular characteristics of anthrax differ in all respects from the preliminary manifestations of malignant pustule, in which the primary vesicle originates from a deposition of the poison by insects or by emanations from animals affected with the disease.

The local contamination of malignant pustule or charbon is circumscribed at the outset so as to be arrested by cauterization, but if neglected, it soon extends to the sur-

rounding tissues and becomes a very grave disturbance of the entire organism.

The application made of the term anthrax, confounding it with the phenomena of malignant pustule, is more excusable on the part of the author of this paper, in view of a want of proper discrimination in the writings of others upon this subject, and especially in view of the confusion of terms touching these affections, by the savants of the Medical Academy of Paris, as noted in the proceedings of that body.

The practical bearing of the paper upon the germ theory of the origin of diseases merits the consideration of the Association. This question as to the causative influence of minute organisms must be held as subject to clinical observation and being *sub judice*, any light upon the mode in which diseases may be propagated by germs or spores, with the correctives for their invasion or their subsequent development, would prove acceptable to the profession. That bacilli, microbia or other micrococci are the concomitants of various diseases of the organism is proven by the experiments of the laboratory, but whether they are a result of the abnormal condition of the tissues, or should be considered as the initiatory element of disease, remains to be decided by clinical investigation.

In either case, the therapeutic agencies to be employed in disorders with parasitic complications is a problem of practical interest which calls for a satisfactory solution.

The Nominating Committee submitted a partial report as follows:

For President—Dr. Eugene Foster, Augusta.

For First Vice-President—Dr. J. B. Roberts, Sandersville.

For Second Vice-President—Dr. W. D. Bizzell, Atlanta.

Dr. John Gerdine, of Athens, elected to fill the unexpired term of Dr. Foster as Censor.

Dr. Milo Hatch elected for five years as Censor to fill the place of Dr. Wells.

Same Committee on Publication returned.

Committee on Necrology—Dr. Battey elected to fill Dr. Foster's place. Same committee otherwise continued.

It was moved that the attention of the Association be called to the fact that the term of the Secretary, Dr. James A. Gray, does not expire until 1887, and also that the same is true of Dr. E. C. Goodrich, Treasurer, and same be published in Transactions.

Adopted.

THIRD DAY—MORNING SESSION.

MACON, April 18th, 1884.

The Association was called to order by the President at 10 o'clock.

The minutes of previous day were read and approved.

Dr. Wm. Abram Love, member of the Committee on Necrology, submitted memorial tributes to the memory of Dr. Alexander Means, of Oxford, Dr. Thomas Raines, of Atlanta, and Dr. McMillan of Columbus.

Dr. Miller stated that in view of the great number of important scientific papers that had been presented and that ought to be published, he thought it bad taste to take up so much space in the Transactions with long obituary notices.

The report of Dr. Love was, on motion, referred to Committee on Publication.

On motion, Dr. Miller was requested to read his paper presented by title yesterday. The reading of the paper was listened to with marked attention.

Dr. Miller's paper was discussed by Drs. C. D. Smith and W. D. Bizzell. Dr. C. D. Smith stated that in *ante-bellum* days consumption was rare among the negroes, but that they were dying rapidly now from the disease. He asked for the observations of others.

Dr. Bizzell said:

Consumption is a disease whose etiology lies deeper than mere tubercular deposit or destruction of lung structure.

It may be, and in all likelihood is true, that there is a germ or micrococcus that is capable of setting up that peculiar pathological process which we call consumption or tuberculosis. Just as there is a seed for the familiar plant we call cotton, but all observation and experience teach us that in order to get the plant to bear fruit and flourish, the condition of soil, climate, rainfall, etc., must be suited to the plant, or failure will result. Just so with certain of the infectious diseases, radically change the environment and the disease is jugated.

If tuberculosis be an infectious disease resulting from the implantation of disease germs, as the experiments of Dr. Koch seem to demonstrate, a careful study of the disease will show that, like many of the seeds of plants and spores of fungi in the vegetable world, it requires a certain preparation of soil, as it were, and certain forming conditions, or otherwise the disease seems to lie dormant, loses its effect and the victim escapes; else how are we otherwise to account for the very general immunity of nurses and friends or companions of the sufferers, notably those in attendance constantly on this class of patients as the nurses of the Brompton Hospital for consumptives in England, etc.

It is a matter of common observation that phthisis always declares itself after the organism has attained a condition of low vitality, whether it be by inheritance or a feeble

organism struggling into puberty, or an originally fair constitution hampered by unsanitary environment, abuse of the vital powers, overwork, anxiety of mind, indigestion. No matter what route the individual may have traveled or what his original endowment of constitutional vigor, before phthisis declared itself, he must have reached a low plane of vitality before the disease can fully and clearly establish itself. The foregoing being in the main propositions which, on investigation, resolve themselves into facts, we must reach the conclusion that there can be no rational treatment for the cure or prevention of consumption that is not hygienic. To improve the powers of digestion and assimilation, and in consequence produce rich blood and healthy cell growth, if we cannot attain to this we cannot hope for arrest in the progress of the disease, much less for cure. It matters not how we reach this much to be desired result, it is sufficient if we attain it. It cannot be effected by the administration of drugs alone, even though they partake of the nature of food as cod liver oil, for my experience, no doubt, accords with that of the majority present when I say that in not more than one case in a hundred will cod liver oil be accepted and digested by the stomach without previous preparation of that organ through hygienic methods. And of all hygienic methods there is nothing that does not include fresh air, pure water and muscular exercise; temperature and humidity, also, are of very great importance, and the barometric pressure is not to be lost sight of. As has been pointed out by Dr. Miller, the mountain region of the Blue Ridge and Alleghanies, which lie almost at our doors, will supply all that is necessary in the hygienic treatment of phthisis. There is no disease to which we should apply more literally the precept of the Great Teacher, "What thou doest, do quickly," nor to

which we can apply with greater force the Latin motto, "*obstu principes*," oppose the beginnings. For if the golden opportunity has been allowed to go by and the destruction of lung structure has already advanced to the formation of cavities, further treatment as a rule is only palliative.

The most natural question both for the physician and patient is where shall he go. This part of the question has been largely answered by my predecessor, Dr. Miller. But as I have had some personal experience in the matter, I will give my personal impressions as to a part of the Appalachian region. First, I would say that I spent six months of the summer of 1882 in this region, much impaired by dyspepsia and other causes, and it was the best six months work I ever accomplished. The first thing which specially impresses the observant physician is the vast difference in appearance and physique of the inhabitants of the Eastern or Blue Ridge slope of the Alleghanies and the outlying foot hills, and those occupying the Western slope and contiguous mountains. Among the hardy people of North Georgia, Western North Carolina and South Carolina, consumption is a disease almost unknown among the native population, while among the mountains and valleys of East Tennessee the disease is extremely common and the mortality therefrom correspondingly great. As to actual names and places I should prefer Hendersonville, in Henderson county, North Carolina, to Asheville; while it is no more elevated than the latter, the water is far better and it is not so hemmed in by hills. Bad water is a great disadvantage to Asheville, in my opinion. I spent one month there very pleasantly, the accessories of civilization in the companionship of cultivated men and women, delightful walks, drives and enchanting scenery, throw a charm about Asheville that is peculiarly attractive; the trouble is that

consumptives are too apt to resign themselves to a quiet, inactive though pleasing town existence, that is not altogether what they need. I prefer some of the more elevated hamlets of Barnesville, Bakersville, etc., planted in the very heart of the mountains where living is cheap, the air pure and the temptation to ride or tramp in the wild woods and gorges cannot be resisted. As Dr. Miller has so strongly insisted on, there is nothing like mountain climbing to expand the lungs, quicken circulation and nutrition, develop appetite, promote digestion and thus build up and elaborate healthy cell growth—thus staying disease and averting the dire ending or postponing it indefinitely.

The Nominating Committee made the following report:

We recommend that the Secretary publish in the Transactions a list of the counties comprising each Congressional District, and that in the list of names at the end of the Transactions the number of the Congressional District in which each member resides be published with his name.

R. J. NUNN, *Chairman.*

JNO. THAD. JOHNSON, *Secretary.*

Adopted.

[See pages 5, 6 and 7 for remainder of the report.—SEC.]

Dr. J. T. Johnson said that he had prepared a report of a case of hydrophobia, which he had seen a few months ago, and desired to present it by title and have it referred to the Committee on Publication.

On motion the Doctor was requested to report the case in full, which he did.

Dr. J. M. Hull stated that he had seen several well marked cases of hydrophobia, and that the suffering of the patients was indescribable. He mentioned chloral as having given as much or more relief than any remedy used.

By Dr. Foster.

Resolved, That the next session of the Association be held in Savannah.

Adopted.

The President announced the following appointments:

Orator—Dr. James B. Baird.

Committee of Arrangements—Drs. J. G. Thomas, J. D. Read, T. J. Charlton, J. C. LeHardy, W. Duncan.

The Auditing Committee submitted the following report:

We have examined the books and statements of the Treasurer and of the Secretary and find them to correspond with the vouchers accompanying them.

There is a balance due the publishers of	$225 81
A balance in the Treasury	126 30
Leaving a debt due by the Association of	$199 51

At the close of the year April 15, 1884.

We desire to draw attention to the energy displayed by the Secretary in procuring a number of advertisements, without which, owing to the delinquency of members the Association could not have published its proceedings.

We wish also to express our satisfaction at the neatness and accuracy with which the accounts of the Treasurer and of the Secretary have been kept.

R. J. NUNN, *Chairman*,
EUGENE FOSTER,
W. B. WELLS.

MACON, GA., April 18th.

Adopted.

AFTERNOON SESSION.

The Association was called to order at 3:30 o'clock.

The President announced the following delegates to the American Medical Association:

Drs. Eugene Foster, H. F. Campbell, A. G. Whitehead, J. P. Logan, G. W. Mulligan, H. McHatton, B. R. Doster, DeSaussure Ford, W. H. Doughty, Sr., W. F. Westmorland, V. H. Taliaferro, W. O'Daniel, K. P. Moore, A. J. Logan, C. D. Smith, T. O. Powell, R. J. Nunn, T. J. Charlton, Robert Battey, W. B. Wells, John Gerdine, E. Fitzgerald, M. G. Hatch, Wm. Perrin Nicolson, P. L. Hilsman, J. C. Solo-

mon, James A. Gray, S. B. Hawkins, G. G. Crawford, T. M. McIntosh, E. C. Goodrich, T. R. Wright, C. H. Hall, J. S. Todd, E. L. Connally, G. W. Holmes.

By Dr. Foster.

Resolved, That the President's name be added to the list of delegates to the American Medical Association.

Adopted.

Dr. McIntosh gave a synopsis of the paper already reported by title. He exhibited a number of photographs illustrating his paper.

On motion Dr. H. J. Williams read his paper presented by title yesterday.

By Dr. J. M. Hull.

WHEREAS, The Medical Association of Georgia, has been in session in Macon for the past few days, receiving courtesies, kindnesses, and encouragement from her physicians and citizens. Therefore be it

Resolved, That the thanks of the Association be returned for all these hospitalities and evidences of good will, and that we will ever cherish them gratefully.

Resolved, That to the officers of the Academy for the Blind we return thanks for the entertainment, which was so much enjoyed.

By Dr. T. F. Walker.

Resolved, That in consideration of the elaborate report of the entire proceedings of the Association having from day to day been published in the Macon *Telegraph and Messenger*, making a perfect record for all the members to read at their leisure, the thanks of this Association be extended to said newspaper and to the faithful reporter Mr. Jule Rodgers, who has been persistent in his attendance and efforts to obtain a correct and satisfactory report.

Adopted.

On motion of Dr. C. D. Smith the Association adjourned to meet in Savannah on the third Wednesday in April, 1885.

JAMES A. GRAY,
SECRETARY.

APPENDIX.

PRESIDENT'S ADDRESS.

DELIVERED BEFORE THE MEDICAL ASSOCIATION OF GEORGIA.

BY A. W. CALHOUN, M. D., ATLANTA.

Gentlemen of The Medical Association of Georgia—Ladies and Gentlemen:

It will perhaps surprise some of you that I have departed from the usual order of addresses before this Association, and to some degree have been actuated by rather a selfish motive in the selection of a subject, for I have fallen upon one not only in accord with my own tastes, but one which I feel assured will impress each individual of this intelligent audience with its appropriateness, with its practical facts, and with its notes of timely warning.

My subject—School Hygiene in Relation to its influence upon the Vision of Children, or School Sanitation—does not express the full scope of this discourse, but is a faint outline of what I shall have to say to you in the time allotted to me.

Education is the preparation for the work of life, not a thing that is good in itself. If it has helped life to be healthy, happy, successful and long, then it has been good; if in any degree it has caused disease, unhappiness, non-success, then it has been bad. The medical aspects of school life are deservedly attracting more and more the attention of

doctors in every land where education and civilization have made much progress. The researches of one investigator developed the fact that out of more than 2,300 infants examined by him, only 122 possessed abnormal peculiarities of any kind, and from this fact drew the conclusion that children, as a rule, are physically sound when they start to school. That deformities of one organ or another, simple or serious, do exist among school children admits of no argument, and many of these may be reasonably attributed to the influences surrounding a child during its life in the school-room. The various parts of the organism of youth are easily disarranged, and if the cause operates continuously the disarrangement is liable to become permanent.

Before the child ever sees the inside of a school-room he learns many useful things—and yet this learning does not injure his eyes. It is a fact that children at the time of entering school are free from that common affection, near-sightedness, but almost immediately thereafter the disease begins to show itself. This is conclusive evidence that the fault to a great degree, at least, lies in the school.

Before his school days begin, and while the child is learning, and that too very rapidly, all the knowledge that he gains is real knowledge of concrete things, gained through the use of all his senses and all his activities by being brought into contact with the things about which he learns. He is free to sit still or to move; to fix his attention upon a thing as long as it interests him, and then to leave it for something else. But at school nearly everything is unnatural. Very often the child is seated on a hard bench, so high that his feet cannot touch the floor, with the back, if it have any, so straight that a comfortable position is impossible, and the desk, if there be any, so far in front of him that he cannot use it without leaning forward much

further than is good for either his back or his eyes; and there with foul air to breathe, with windows improperly shaded, or not at all, with light coming from the front as often as otherwise, and with little or nothing to make the place look cheerful or homelike, he is confined for six hours a day, five days in the week, from twenty-eight to forty-five weeks in the year, and for as many years as his constitution can stand such abuse, or his parents afford to send him. In this room he seldom comes in contact with natural things, or even with representations of them, excepting his teacher and fellow students, and they, too, are made as unnatural as possible. Seated on his high, hard bench, prohibited from looking to the right or left, book in hand, he is committing to memory the words of the author, and this they call getting an education. "What's in a name."

It has been truthfully said that sight is the noblest avenue of the mind, and its impairment or loss is a greater evil than would be that of any other bodily sense. For many years deterioration of the eye among pupils in public and private schools has been a subject of complaint and investigation both in this country and the older portions of the world. This impairment of sight, this deterioration of the eye, is principally the immediate result of myopia, or near-sightedness which, in its turn, is caused by defective modes of education and their hurtful surroundings.

Myopia is a disease. A near-sighted eye is not a normal eye. Children born in the normal state do not have near-sighted eyes. But what is myopia? Anatomically the difference between a normal eye and one that is myopic, or near-sighted, is practically a difference in the length of the eye-ball. The slightest fractional increase in the length of the ball beyond its normal length is an increase of myopia. As the eye becomes elongated the retina, which receives

impressions, and upon which images are formed, is thrown beyond the focus of the rays of light coming from a distance.

Very rarely before the fifth or sixth year of life does myopia make its appearance, about which time children usually begin their attendance upon school, but from this time on, under certain unfavorable circumstances, the eye gradually elongates, reaching and remaining, perhaps, at a certain point of elongation, a slight or high degree, or constantly increasing through all the years of school life, even to the twenty-fifth year, and indeed in some instances, continuing slowly to lengthen through almost the whole of life.

Myopia is essentially a disease of childhood, beginning from the sixth to the fifteenth year, just at a time when the body as a whole is developing most rapidly. Rarely does it originate after the twentieth year. When once in existence in a child, it is usually progressive, and therein lies the danger; and this fact, coupled with the fact that it is an incurable disease, makes it an important subject in connection with education, for the causes that produce the disease at this period of life also operate to increase it. The eye of a child is a plastic organ, easily changed in its shape, and its tissues are in a condition to be readily modified by the use which is made of the organ. The child goes on to the eighth or tenth year, perhaps a little longer, when it is observed that it has to hold whatever it is looking at a little nearer to the eye than previously, and then, upon examination, the fact is revealed that the eye is myopic or near sighted. If you follow such a child up to the age of twenty-five or thirty years, it will be found that the myopia has doubled, and perhaps quadrupled.

I cannot here refrain from quoting a well known author, who thus writes:

"Predisposition to myopia is almost always inherited by at least some of the children where one parent is myopic. In these children myopia may often be detected, if sought for, at a very early age, and is generally evident at from eight to twelve years of age. Once present, it tends to increase, and should be watched with care. If not existing at least in some degree before sixteen years of age, it is never developed, even by excessive use of the eyes.

"During the period of youth, which is usually also the time of closest application to study, there is a disposition to gradual development of the inherited myopic tendency; but this may be kept in abeyance if the eyes are used principally for large objects; and if, during this period, the myopia does not become very considerable, it may remain stationary during the rest of life. Temporary increase of myopia may take place during these years of growth and of study, from too close application; but, provided its degree is still moderate, its further progress may be arrested at or after maturity if the individual grows more prudent. But, and this constitutes the gravest feature of the disease, if the myopia has, during this period, already reached a high degree, the tendency to continued progress frequently cannot be arrested, notwithstanding the exercise, too late, of the greatest care; and degenerative changes go on in the tissues and media of the eye, with the sad prospect of partial or even total blindness at or before middle age.

"Since it has been shown that it is especially by continued tension of the muscle of accommodation in study that myopia with its attendant dangers is generated and increased, and as it is well known to be only preventable and not curable, it follows that a change in our methods of education is an absolute necessity, or else this which might

be termed self-imposed disease, will impose a more and more grievous burden on the community.

"A child having an hereditary leaning towards myopia is expected to give a large portion of time every day to study of oftentimes badly printed books, perhaps in a dim light, and sometimes with the requirement from his teacher that he shall not take his eyes from his lesson. Myopia is thus begun. As this augments, the child who does not see things about him clearly, has less pleasure in the usual sports of his age, and finds more enjoyment in books. His close application to reading, writing, drawing, etc., keeps up convergence of the eyes and pressure upon them of the recti muscles, which tends little by little to increase the ellipsoid change of form and elongate the antero-posterior axis. These alterations go on during the period of growth and of most continuous study, because at this time the tissues of the globe are softer and more extensible than after maturity. If on reaching this latter term the structural changes are still only moderate in degree, the myopia may continue stationary during life. But if at this time great deviations from the normal condition have already been produced, the affected parts are less capable of resisting further yielding, and progressive myopia is thenceforward an ever present source of danger.

"Prevention is the sole resource at our command; restoration is impossible. And in order that preventive measures may be seasonably adopted, it is first necessary that the profession and the public should become alive to the fact that in a large number of cases myopia is one of the gravest affections of the eye, capable of limitation by constant care during childhood and youth; but, if not thus limited, likely to be a source of future disability and misery, and to be handed down as an onerous inheritance to

children. At present the warnings inspired by frequent sad experience in the practice of every skilled observer are almost unheeded, and it is but too common to see the chances of retaining even moderately useful vision in future years recklessly sacrificed to a vain ambition for acquiring mere book knowledge, which, when gained, is often valueless to its possessor, or if otherwise it could be usefully applied, cannot be made serviceable because of the imperfection of sight which has been created in obtaining it.

"Very high degrees of myopia should also be recognized as an infirmity deserving careful consideration before assuming the obligations of marriage; for those in moderate circumstances may well hesitate to choose partners who though highly cultivated, may probably at middle life become unable to provide for their households or their children."

That the eye grows weaker as the term of study grows longer, is clearly proven by actual investigation. Careful tests have been made of the eyes of many thousand school children in America, Germany, Austria, Russia, Switzerland and other countries, and invariably with similar results, viz: that the proportion of normal-sighted children generally lessens as the age of the subjects advances, and as they reach the higher grades of study. The statistics thus gathered show that while in children at common village schools there is but one-fourth of one per cent. of myopia, it rises to 21 per cent. in city schools of high grade, and in some high schools and universities it has reached 60 to 70 per cent. The examination of six hundred students of theology at the University of Tübingen found 79 per cent. suffering from myopia. Other statistics have shown that in those who studied two hours out of school, the proportion of myopic students was 17 per cent.; in those studying six

hours 40 per cent. Germany furnishes more myopic, or near-sighted subjects than any other country in the world, her schools showing at least 62 per cent., while in America, so far as examinations extend, the rate is about 27 per cent. So it would seem that even in our own land the school-room is a factor most directly influential in the gradual and increasing development of a race of spectacle-using people. The ratio has been found to be smaller in America than in Europe, because, probably, of the greater activity and variety of life and the less degree, as yet, of hereditary tendency. A curious fact made known by these investigations is, that colored school children suffer so slightly from myopia as to be practically free from it.

These facts deserve serious attention, especially in connection with our undoubted power of modifying or arresting the progress of myopia by proper management and by self-denial during the years of growth and of education.

Myopia, says one, is especially prevalent among the so-called cultivated classes, and the more time people spend in intellectual pursuits the more myopia do we find. Yet students do not use their eyes for more hours a day, or on finer objects than jewelers, engravers, draftsmen, seamstresses, type-setters, and many others who engage in long continued work on small objects. These occupations do not show any tendency to myopia, while the professional and literary callings do. The particular reason why members of mechanical arts show less myopia than those of studious and literary occupations, is not because they use their eyes less, but that the application of their eyes occurs at a different time of life and under entirely different conditions. Germany is confessedly one of the most studious nations in the world, and she certainly is the most near sighted. Many of her school houses are very old structures, original-

ly built for convents, and poorly lighted; moreover, the German text itself is obscure compared with the clear Roman letters.

In writing and study, it is easier to sit bending over an ordinarily located desk, in the stooping position, than in an erect posture. This position prevents by compression the free return of blood from the head. The posture of the head favors its detention in the eyes, while the working of the brain itself demands more blood, and hence we easily have a congestion of the eye-ball, and especially of those parts that are most active, viz: the retina and optic nerve. With this congestion there occurs softening of the sclerotic or outer coat and increase of the fluid contents of the eye-ball, increasing the pressure from within. At the same time, the muscles on the sides of the ball produce pressure from without, in their effort at converging for near vision. This condition of things causes a bulging of the posterior wall of the eye, and in this way myopia, or near-sightedness begins and increases, for the same causes continue to act with greater force as the trouble progresses. In children the tissues of the eye-ball are much softer than in the adult, and this is one of the principal reasons why these causes are more active in producing the disease between the ages of six and twenty. Undoubtedly the disease is often hereditary, but the predisposition to it may be largely counteracted by proper care. The absence of myopia among savages is attributable to absence of hereditary tendency together with absence of undue tension of the eyes for near objects. British surgeons tell us out of many thousands of the natives of British India examined by them, not a single near sighted one was found. Who of you can call to mind one near-sighted negro who lived in *ante-bellum* days? Educa-

tion has put its mark upon them now, however, and wonderful to relate, they are proud of their infirmity.

The examination of several hundred negro school children in New York found only 2½ per cent. myopic. In many negro schools in the South, examinations discover less than 1 per cent. Absence of hereditary predisposition largely explains this difference, but a few generations hence, with increased educational facilities, and with the hereditary tendency steadily increasing, near-sightedness will become not an uncommon disease among negro students.

Bad air and defective light play an important role in the production of myopia. Says a distinguished author: "Air and light are the first and last and best messengers of life—the first breath and the last breath—the first glance and the last glance; how wonderful!"

Bad air alone, in a school-room, acting as primary cause, may set in train a series of morbid processes, which may, and often do, affect not only the working capacity and integrity of the organ of vision, but which may lead even to its total destruction. One of the professors in the law school at Cambridge, in commenting upon the frequency of eye diseases in that institution, says, it must not be supposed that young men injure their eyes by excessive application. "Bad ventilation and the gas-heated air of the lecture room cause the trouble."

But light, plenty of good light, is one of the chief needs of the scholar. Too much light can never be thrown into the school-room, especially when we have at our command the means of regulating the excess of glare. A room is not sufficiently lighted when a child cannot easily read fine print, on a moderately clear day, at a distance of twelve to fifteen inches. The less the light, the nearer the object must be brought to the eye, and the greater the strain in

the act of vision; for reduction in illumination is, as a rule, precisely equivalent to a reduction in the size of the object. A model school-room would be one in which there was not only an abundance of good light and of good quality, but in which the eyes both of pupils and teachers were alike shaded from the painful glare. In all cases the light should come from the left and at a distance of four to five feet from the floor. Next to this a rear light is permissible, but light from the right should, if possible, never be used. Windows should never be placed in front of the pupil. Light from such a direction is positively injurious. They should always be placed on the left side; the next best place is the rear, and after this the right side, which position should only be occupied when no other can be obtained. But the true light should come from over the left shoulder. It does not harm the eye, does not cast a shadow on the pupil's work and is not reflected directly into the eye. A German writer thus sums up the results of his investigations: "The narrower the street in which the school-house was built, the higher the opposite buildings, and the lower the story occupied by the class, the greater the number of near-sighted scholars."

A recent investigator writes: "Among the causes of visual weakness among American youths may be named a stooping posture, which cramps the chest and brings the eye too near the book or paper; reading at twilight and late at night, and studying by lamp light in the early morning, reading in the cars, using kerosene lamps without shade, reading while facing a window or any light natural or artificial, and still more while facing the bright sunshine, reading dime novels or other books printed in too fine type, reading while lying in bed, wearing a veil; and neglecting to cultivate far-sightedness by carefully examining dis-

tant objects. Hence myopia is more common in cities than in the country, more among those working on near and minute objects than those laboring in the fields with a wider range of vision and more objects to invite habits of observation."

Tension of the accommodation, that is, long continued use of the eye upon objects brought close to it, is considered by all authorities one of the most (if not the most) fertile causes of progressive near-sightedness. The act of reading involves very considerable physical labor. It is said a book of 500 pages, 40 lines to the page and 50 letters to the line, contains 1,000,000 letters, all of which the eye has to take in, identify, and combine each with its neighbor. Yet many readers will go through such a book in a day. The task is one he would shrink from if he should stop to measure it beforehand.

It is well known to every investigator that imperfect type is influential in the production of eye diseases. "Bright white paper, particularly if its surface is glazed, is dazzling or irritating. It is on account of the quality, rather than the size of English print, that it is usually so much pleasanter to read than American. "Some cheap publications manage to combine all of the defects referred to, in such a degree that a more paternal government than ours might well suppress them as enemies of society. Fortunately, such publications do not contain intellectual treasures that it need tempt one to risk his eyes to reach." While too fine print is regarded as a factor in bringing about eye disease, it must not be forgotten that too coarse print is wearisome to the eye, for it requires more exertion of the muscles governing the movements of the ball. Especially is this the case if the breadth of the page is too great. It is for this reason that the narrow form of the English blank

verse is so little fatiguing to the eye. A double column page which is well printed and properly divided, is certainly preferable to the same amount of matter extending in a single line across the entire page.

An enthusiastic and ingenious writer asserts that "nature and science declare" that the color of the paper of all books should be green. "Green grass covers the ground and green leaves are our canopy, and no other color is so grateful to the eye. Let our books be printed on green paper, and let our printers use red, yellow or white ink for the noxious black." When this has been done, he says, "everybody will rejoice except the spectacle-makers. The eyes of the scholar and of the student will no longer be wearied with the myopian contrast of black and white, but strengthened and refreshed by congenial colors; and to pore over the pages of a book would be no more fatiguing to the eyes than gazing on a verdant prairie decorated with variously tinted flowers." We must agree with him in this, that the reform would be revolutionary, and that the interest of the trade would be hostile to the change.

The best safeguards against harm are afforded by the best positions and best light, clear type, plain inks, with the best paper of yellowish tints and abundant space between the lines.

"The increased demand that the exigencies of the fashion of the times make upon the eyes as well as upon the brains of the children, and the increased numbers that are yearly brought within the influence of school life by the compulsory laws of governments or of public opinion, should be accompanied by a corresponding increase in the use of all the alleviations and precautions that science and humanity can suggest. School training is necessarily an artificial process, and unless it is conducted under rational

and favorable conditions, universal education can never be an unmixed universal blessing." Much of the injury to body and mind as well as sight is traceable to causes which goad the children on to tasks that the brightest and strongest of them are scarcely equal to, and the "higher education" that is now so earnestly demanded for the gentler sex, is too often dearly bought at the expense of shattered constitutions and unstrung nerves. But if these things must be, in the name of humanity and justice, let them be surrounded by all the checks that can lessen their power for evil.

After a diligent study upon the question of construction of school houses and the construction and arrangement of desks and seats, a distinguished surgeon has stated, that 90 per cent. of curvature and other diseases of the spine are developed during and largely attributable to school life. It should not be forgotten that there is an architecture for schools as well as an architecture for palaces. One is not less worthy of study than the other, and we are at fault in taste as well as in hygiene if we forget that here real beauty consists, above all things, in the perfect adaptation of a building to its uses." An abundance of properly regulated light, good ventilation and plenty of room, are the essentials of a perfect school house.

BOSTON MEDICAL LIBRARY SEP 7 1894

A certain school committee, after thorough investigation, reports that it is "of the opinion that the practice of requiring pupils to commit their lessons from books, is not only the cause of much of this near-sightedness, but that it is a most pernicious practice from every point of view, and more especially so when much of the so-called studying must be done at home evenings. Children under fourteen or fifteen years of age, should never be required to get regular lessons

out of school hours. This is not to say they must spend those hours out of school in idleness or play."

Fewer hours of study and more rational methods of teaching, less cramming of mere memory and more healthy development of the intellect, will make brighter, healthier and more intelligent students, who will develop into stronger, happier, more energetic men and women. For such as these the practical affairs of life offer many and varied fields of usefulness, while for the sallow-faced, narrow-chested, weak-eyed, book worm, there is no room in a busy world.

REPORT ON DISEASES OF WOMEN FROM THE FIRST CONGRESSIONAL DISTRICT.

By R. J. NUNN, M. D.,

PHYSICIAN TO THE FEMALE DEPARTMENT OF THE SAVANNAH HOSPITAL, SAVANNAH, GA.

CERVITIS,

Chronic or acute, is one of the most common conditions which a physician is called upon to treat in women. This condition may be the result of many causes, but however it may originate, the stages through which it passes can be considered as 1st, congestion, 2d, infiltration, 3d, organization.

CONGESTION.

In this stage the vessels are abnormally distended with blood, and as a consequence the cervix is enlarged and tumefied, is frequently but not always tender to the touch, and of a color darkened in proportion to the degree of congestion.

INFILTRATION

naturally results from the pressure exerted upon the walls of the blood-vessels in the stage of congestion. In this stage the serum of the blood passing through the yielding walls of the vessels, permeates the surrounding tissues. This process is soon followed by the stage of

ORGANIZATION,

in which the infiltrated fluid becomes organized and the condition of engorgement or hyperplasia is the result.

This rapid review of the pathological processes involved in cervitis is necessary to an elucidation of some further observations upon this subject.

THREE DISTINCT CONGESTIONS OF THE CERVIX.

In studying the subject of cervical congestion it becomes essential to keep separate and distinct in the mind, 1st, the endo-cervical membrane; 2d, the cervico-vaginal membrane; and 3d, the tissue proper of the cervix.

It is quite possible that one, two or all of these structures may be congested at the same time, and the congestion may be general or partial.

ENDO-CERVITIS.

In cases in which the endo-cervical membrane is congested to a much greater extent than the other tissues of the cervix, that membrane may be extruded, the os may be everted, and a condition of ectropium may be produced. This has taken place in one case while the patient was under treatment in connection with another physician whose attention I directed to the fact and who corroborated my observation. This condition is sometimes accompanied with a tenacious mucous discharge, and if of long standing it may result in troublesome erosions and sometimes annoying hemorrhages.

LOCAL TREATMENT.

For this endo-cervitis local depletion is the sheet anchor which is carried out in various ways according to the predilections of the attending physician. Of local applications to the inflamed and eroded surfaces there have been no end, all of them sometimes successful and all of them oftentimes bringing nothing but mortifying failure. The ordinary organic and inorganic astringents, and also special

applications, such as ergot, pinus canadensis, hydrastics, etc., have all been tried.

RESORCIN

has been applied in many ways, but its action is too caustic for this purpose, and even when mixed with inert powders of different kinds it was found so difficult to limit its action that its use in this manner was abandoned. Dissolved in glycerin in the proportion of one drachm to one pint, its employment on tampons has given satisfactory results. In the same way also

BETA NAPHTHOL

has been used and will be found a much less irritating application, in fact the least so of any of this series which I have tried, giving equally good results. It is not very soluble in glycerin, about two drachms to the pint being practically the point of saturation, but the strength I am in the habit of employing is not over one drachm and sometimes only half a drachm to the pint.

PEROXIDE OF HYDROGEN.

For the purpose of cleaning away the mucous secretions from abrasions of the cervix, a most useful agent is the peroxide of hydrogen. It is also an excellent stimulant and disinfectant. As purchased it is an acid solution, but for use it may, if desired, be neutralized with any alkali or alkaline earth. In combination with a solution of lime both with and without an admixture of alcohol, it has done good service.

LIME WATER,

separately or mixed with alcohol, is a useful agent when its alkaline, solvent, stimulant, and siccative properties are desirable.

One great drawback to the use of lime water is the difficulty of obtaining a good article and of then keeping it in stock, the carbonic acid of the air causing its gradual deterioration; moreover, the lime is not sufficiently soluble in water to form a solution having sufficient strength to be very energetic in its action.

SYRUPUS CALCIS

of the pharmacopœia has so far proved to be the most useful of any application which I have tried, or which has come to my notice as having been tried by others, in abrasions of the cervix.

In this solution the tough, tenacious, ropy mucus readily dissolves, its gently caustic action does not pass beyond the bounds of stimulation, while its alkalinity seems to be not the least useful of its properties; finally, it seems as if it possessed the power of promoting the growth of new and healthy mucous membrane. In my hands the syrupus calcis has proved a most useful application to specific and non-specific ulceration, and I would recommend its use to the profession as a topical application. A word of caution as to its use in erosions, etc., may not be out of place. It is possible to continue its application too long and then the growth of new membrane will be retarded and the abraded surface will bleed with great freedom; when this occurs the use of the application should be suspended to be resumed again according to the judgment of the physician.

REST.

While keeping in view the various remedies which have proved useful in this condition of the cervix, it is well not to lose sight of the one panacea to all human ills—*rest*. However obtained, obtained it must be. If it is necessary to con-

fine the patient to bed it must be done, should the tamponade suffice, so much the better.

WOOLEN YARN TAMPON.

In a former report I mentioned the great convenience of Foster's cotton wick tampons. Although wool had been discarded from gynæcological practice in favor of cotton, I saw many reasons why I should give it another trial, and I can recommend to you the use of the woolen yarn tampon. I usually wind together sixteen or eighteen strands of woolen yarn and from the rope thus formed cut off such lengths as I think will suit my purpose. To one end I attach a string for the removal of the tampon, while the other is moistened with whatever dressing it is desired to use.

In cases of abrasion, ulceration, or in fact wherever I fear the woolen fibre might prove more irritating than the cotton, it has been my habit to first introduce a thin layer of cotton and then to pack in the woolen yarn. The difference of elasticity in favor of the woolen yarn tampon over the cotton wick is, I think, sufficient to cause it to be received with favor by the profession, and I know that many of my patients have expressed very decided preference for this dressing.

Sometimes I place the dressing directly from the ball upon which it is wound and after it is in situ cut it off and attach the string.

Occasionally it is necessary or convenient to put in several small tampons, in which case all of the strings are allowed to project from the vagina, and the order of their introduction is indicated by knots upon the strings so as to facilitate their removal.

For strings, I use coarse white flax thread.

THE TAMPON,

while most useful in the hands of an experienced gynæcologist, may become harmful when improperly applied. If used as a soft pessary, it should be large enough to give the needed support, but it may be easily made a little too large and it then proves to be a source of irritation and annoyance rather than of relief.

If the tampon is used only as a medicated dressing to an abraded or an ulcerated surface, then it will be often found best to let it be as small as possible.

Frequently in the treatment of various forms of ulceration, malignant and benign, it has occurred that the case which progressed well at first would become indolent and seem rather to retrograde, then by omitting the use of the tampon it would again improve.

It seemed as if after a time the surfaces became intolerant of the presence of a foreign body.

How and when to use the tampon is a question which would form an interesting and important subject for investigation, and to this might be added a further inquiry into the materials for tampons and the especial indications for the employment of each.

CONGESTION OF THE CERVICO-VAGINAL MUCOUS MEMBRANE.

The vaginal surface of the cervix may be so congested as to swell or bulge out, leaving the os retracted and sunken in.

LOCAL TREATMENT.

Local depletion and fixation by tampons are alone required in this form of congestion. Abrasions are so rare in this locality that their treatment needs no mention in this connection.

CONGESTION OF THE TISSUE OF THE CERVIX.

While a congestion of the tissue of the cervix is almost always associated with a like condition of the mucous surface, still, cases will now and then be met with in which the mucous membrane does not appear to share in the pathological changes taking place in the deeper structures of the organ.

The local treatment of this condition can be no other than that pointed out for congestion of the mucous membrane.

THE SHAPE OF THE CERVIX

is subject to change, depending upon the localization of the congestion; thus it will be remembered that I reported to this Association a case of this kind in which the cervix assumed the "peg top" form, which was entirely relieved by local depletion, the cervix reassuming its normal shape. I think, however, that the success attending treatment in that case was exceptional.

Uniform enlargement is, of course, the most common form, but next to that is a saucer or ring-shaped cervix, in which the cervix gradually flattens and the circumference may even protrude beyond the level of the os, so that the center of the cervix (the os) seems to be retracted to a greater or less extent.

FREQUENT ATTENTION IS NECESSARY IN THE TREATMENT, ESPECIALLY IN EROSIONS.

Applications and tampons should be used at least once daily, or in bad cases twice, and hot douches taken morning and evening. Cases treated once or twice a week will linger on for years, bringing only discredit to the physician and vexation to the patient. With proper, constant and

frequent attention, I have not found erosions of the cervix to heal more tardily than ulcerations of the same size and age upon other portions of the body.

One of the main causes of sluggishness in healing seems to me to be the accumulation of secretions which wash away applications and prevent their action at the same time that the denuded surface is kept constantly bathed with an unhealthy and irritating fluid.

SPECULUM AS A SOURCE OF IRRITATION TO EROSIONS.

While dressing patients the speculum, not unfrequently during its introduction, comes in contact with the denuded surface, scraping off the tender membrane, causing bleeding and more or less irritation. This should be carefully guarded against.

POSITION DURING DRESSING.

In discussing the question of the position of the patient while applications are being made to the cervix, the circumstances and surroundings cannot be ignored.

In hospitals and in the offices of specialists in large cities, skilled attendants are at hand to hold the speculum, and under these circumstances the Sims' position will naturally receive the preference for dressing, as it does in all operations within the vaginal cavity, but these the country practitioner cannot have; he must be prepared to act independently, to do everything himself. Under these circumstances either the dorsal or the genu-pectoral position will be found the most useful, the latter being almost essential to the treatment of retroversions and retroflexions.

SECOND, INFILTRATION

If the stage of congestion goes on unchecked, the fluid portions of the blood pass through the wall of the vessels

and permeate the tissues surrounding them, tenderness and other symptoms of active inflammation may cease, but constitutional complications of greater or less importance will almost certainly manifest themselves. For local treatment the lessening of blood pressure, the promotion of absorption and the exosmosis of the infiltrated fluid will naturally suggest themselves as the best methods, combined if necessary with sedatives, but above all, *rest* must not be forgotten.

THIRD, ORGANIZATION.

In this stage solidification of the previously infiltrated fluid begins, adhesions and contractions take place, and the constitutional disturbance and the reflex symptoms are aggravated and intensified, then the local treatment follows the same general lines, sedation and absorption.

In speaking of the treatment of cervitis, I have purposely avoided touching upon the constitutional measures to be employed, because my object is to keep prominently before the Association the value of local depletion in the treatment of this affection.

LOCAL DEPLETION DURING PREGNANCY

is just as successful in reducing congestion as it is in the non-gravid condition. Gestation then is no bar to the employment of this mode of treatment. There is no danger of producing abortion, in fact it is the best possible means of avoiding this accident, so often the result of local inflammations, unsought for, undiscovered and consequently untreated.

VAGINITIS AND CERVITIS DO NOT PREVENT CONCEPTION.

In making up an opinion as to pregnancy in women

suffering from vaginitis or cervitis, or both, it is well to ignore the presence of these affections altogether.

I have seen cases in which the discharge was so profuse that it could be said to flow, and the whole vagina seemed almost denuded of mucous membrane, and yet under such conditions the patient has been impregnated.

WRITTEN OPINIONS.

It would be well if the practice of giving written opinions, as is customary among lawyers, would obtain among physicians.

The frequency with which physicians are misrepresented, especially upon the subject of pregnancy, compels me to this conclusion: Women cannot or will not understand that a doctor can have any doubt of their condition, and if he declines to give a positive opinion they often interpret his declination to suit themselves, much to the discredit of the medical attendant.

STERILITY.

Having been often consulted, as no doubt all of you have been, by women to whom sterility was a source of mortification, or of some unpleasantness, domestic or other, I naturally directed considerable attention to this subject. Assuming the competence of the male to be proved, it is the conditions of the female which call for our special attention.

Among nulliparæ the cause of the trouble can be, in some cases, easily assigned to an existing disease or a malformation, but individuals will present themselves in whom no adequate physical cause can be found. In some of these I think I have been able to see the effect of a diathesis, but this theory rests just now upon too slender a

foundation to admit of its discussion here, where I desire to confine myself as much as possible to facts which may be of practical value.

We next come to the class multiparæ, in whom there does not exist disease sufficient to account for the objectionable condition complained of.

In all patients treated by me it is my habit to make frequent microscopic examinations of the secretions and among the others of the vaginal mucus. In these particular cases the examinations were made as soon as possible after coitus and before the use of the vaginal douche. The result has been that in a large number of instances I have failed to find a single spermatozoon remaining in the vagina.

The women in whom this condition was found had generally a perineum more or less ruptured, or at least an "os laxum vaginæ," and usually a rectocele or a vesicocele, generally the former. They commonly acknowledged that the seminal fluid was expelled immediately after cohabitation.

It may be that these observations will prove valuable in aiding to throw some light upon these very puzzling cases.

Two causes seem to co-operate to bring about this result, both of which can be corrected: 1st, gravitation, and 2d, voluntary expulsive efforts on the part of the woman.

UNCERTAINTY AS TO THE CONSTITUTIONAL BENEFITS RESULTING FROM THE OPERATION OF HYSTERO-TRACHELORRHAPHY.

It has been my good fortune to be able to compare the results of hystero-trachelorrhaphy in a number of cases, the operators being distinguished gynæcologists, among them being the eminent inventor of the operation. With these cases were put in juxtaposition others in which the opera-

tion was recommended by the same gentlemen but not performed at all, but the patients subsequently were treated medically. The results, to my mind, of this comparison have not been favorable to such an indiscriminate use of the operation as has heretofore been the custom. It will require closer observation to differentiate those symptoms which are the result of or dependent upon a cervical laceration from those with which it is only an associate lesion.

TENDERNESS OF THE CRANIUM IN CONNECTION WITH GYNECOLOGICAL DERANGEMENTS.

In the London *Lancet* Dr. A. Robertson draws attention to the use of percussion of the skull as a means of diagnosing certain brain affections, but the fact that there exists an intimate connection between the presence of points of tenderness in the occipital bone, mastoid processes and the parietal bones and certain pathological processes going on in the pelvic organs, seems to be still allowed to lie in undeserved neglect.

The coincident existence of these tender points is quite as pathognomonic as is the appearance of spots of discoloration upon the face and sometimes upon the upper part of the trunk in connection with similar derangements.

For years it has been my custom to examine my patients for this lesion, and it will be remembered that I brought the matter before this Association several sessions ago.

In former reports I drew attention to a *tenderness* of the *mastoid processes*, portions of the *parietal bones*, areas in the *occipital bone*, and I might have added occasionally of one or more of the *cervical vertebras which frequently accompanies diseases of the pelvic organs.*

Dr. Alexander Harkin (Med. Rec., 698, p. 320,) draws attention to local blood letting from these parts as valuable

in the treatment of sexual diseases. To this I would add that I have found Paquelins' cautery applied over these points of tenderness of great use in the treatment of many of these disorders.

The application of the actual cautery to the mastoid processes as a remedial agent for the relief of certain disorders of the genito urinary system, dates, I believe, from the time of Hippocrates and is, beyond question, a useful and powerful remedy. That it fell into disuse is due, in all probability to the clumsiness of the means at hand for its application. Paquelins' cautery and ignipuncture removes these objections.

ABSORBED CONSTITUTIONAL SYPHILIS.

Heretofore I have brought this matter prominently before the Association, and I do so again, because the more I observe and watch for such cases, the more am I convinced that they are far from rare and that many obscure cases of disease would be cleared up by a careful inquiry into their social relations. Many a taint which is now regarded as hereditary might be shown to have a much more recent origin if this indication was more closely pursued.

It is among women that I have seen illustrative and typical cases of this kind; the great difficulty of getting a reliable case among the sterner sex will be appreciated by the profession. I have met with some which were sufficiently clear for my guidance, but lacked that rigid purity of history which is a prerequisite of scientific exactness.

INSPECTION OF THE VAGINA.

It certainly seems to be telling "a thrice told tale" to speak of the inspection of the vagina, but it appears as if the best and most effectual means of inspecting this cavity is still

an open question, even among our most prominent metropolitan gynecologists, as will be evidenced by the following circumstance:

A lady who was one of my patients passed from under my care and after about three months was placed in charge of a specialist of world-wide reputation. During the interval an ulceration appeared in the posterior *cul de sac;* the patient wrote to me inquiring as to its existence during the period of my treatment, and I was able positively to assert that there was no such lesion during the time of my attendance upon the case. The lady in reporting my answer also mentioned the methods of examination employed in her case, and her attendant apologetically remarked that it could not have been found in any other position but Sims's.

Now, I wish to record my dissent from this opinion and to say that the genu-pectoral has been to me the most satisfactory position in which to examine the walls of the vagina, and it was in this position that I treated and examined this case daily for a long time.

In the knee chest position the vaginal walls are placed upon the stretch, and all that is needed is to separate the labia or retract the perineum, or both, with any kind of speculum, and the walls of the vagina are revealed to you as a hollow sphere, even to the remotest fold.

To the country practitioner, called upon to make an examination without appliances, this position particularly commends itself. A by no means despicable perineal retractor can be made from a spoon-handle bent to suit the purpose; even one or two fingers of one hand may be made to do duty satisfactorily at this point in many multiparous women, and a sheet of good writing paper rolled in the

form of a cylinder may be for the moment pressed into service in place of a Ferguson's speculum.

The country physician cannot command the services of a skilled nurse to hold the speculum for him; he must be prepared to do as much as possible for himself, and even if the genu-pectoral position were not the best one in which to make this examination (which it is by all odds), the fact that gravitation does the distension is a great argument in its favor.

It is a pity that fashion rules so much in medicine and that we so often adopt the most popular modes of proceedure to the exclusion of means which, while better, may not be so fashionable.

ULCERATIONS OF THE VAGINAL MUCOUS.

The rapidity with which ulcerations of the vaginal mucous membrane will appear and spread does not seem to have been recognized among the profession. I myself have seen them appear of the size of half an inch within two days.

The possibility of this very sudden appearance of vaginal ulceration, and that, too, without any assignable cause except some illy defined condition of the membrane itself, should be recognized and kept constantly in view. It will often aid us in avoiding some dangerous diagnostic pitfalls.

VAPOR BATHS.

A cheap and convenient apparatus for giving vapor baths from Mr. Laflin, has proved of so much service in my practice that I gladly draw the attention of the Association to it. It consists only of an alcohol lamp with a stand and brass cup to contain the medicine and a strong india rubber coat to cover the patient; to this I add a long loose flannel gown to be used when medicines such as mercurials, which

it is desirable should be retained in contact with the skin, are employed. For the brass cup, which is quickly perfo-

RUSSIAN, TURKISH, OR MEDICATED BATH.

rated when used for mercurial preparations, I have substituted a small enameled saucepan (agate or granite ware No. 10) which has been found to be everything that could be desired.

Under my direction these baths have been used, during the past year alone, many hundreds of times, and the more I see the results obtained, the more am I pleased with them. The woolen garment is intended to be worn by the patient during the whole treatment, or at least is to be changed only at long intervals if, as is sometimes the case, the medicine acts but slowly.

In using this bath it is well to remember that the patient should be seated on a wooden chair, and I cause the arms to be withdrawn from the sleeves so as to increase the surface exposed to the vapor.

MERCURIAL VAPOR IN ECZEMA.

One of the most remarkable cases which has come under my notice, as demonstrating the value of the mercurial vapor bath, is that of a woman (a widow) who was admitted

into my ward in the Savannah hospital, suffering from intermittent fever, and having upon her back an immense patch of eczema measuring about 15x20 inches, which had been there for many years; there was no syphilitic history, but she stated that her husband had had a similar spot for several years.

On three consecutive days this patient had a vapor bath of calomel (30 grains), the first of which produced a marked change in the eruption in 24 hours. The third bath produced moderate ptyalism and their use was discontinued and an appropriate mouth wash was prescribed. In ten days from the time of admission without further medication the eruption had almost entirely disappeared, and the patient was discharged at her own request.

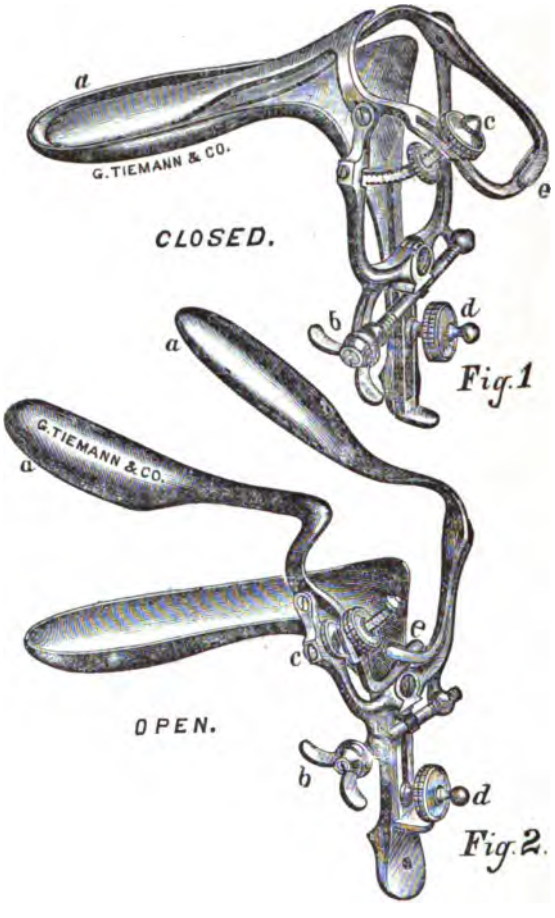
MULTIPLE SPECULUM.

The instrument which I have the honor to present to the Association has been given by the makers, Messrs. Tiemann & Co., the name of Multiple Speculum, a designation which so well expresses the objects which were kept in view while inventing this speculum that I propose retaining it.

In this speculum it was proposed to combine a Cusco, a Graves, a Nott, and a Sims, besides giving to it a motion peculiarly its own. It was likewise originally intended to have the lower blade dilating as in Dawson's, but the makers considered that this would complicate the instrument without yielding an advantage at all proportionate to the inconvenience.

The objective points of improvement kept in view in designing this speculum were to obtain the greatest dilating power within the pelvis with the least possible at the vulvar opening, to support the anterior vaginal wall,

and to attain these results with the greatest mechanical simplicity attainable.



How far I have succeeded I will leave you to judge, you have the instrument before you. I desire, however, to acknowledge my indebtedness to Messrs. Tiemann & Co. for several ingenious modifications of the mechanism of the

expanding device. That you may appreciate the growth of this instrument I place before you the first speculum made; it is the one shown to you in Atlanta three years ago with the new expanding mechanism added.

The only drawback to this speculum is the slightly increased thickness of the upper blade. This may be met by making the leaves of the upper blade of thin tempered steel, or by the use of the other form of the instrument which I exhibited to the Association two years ago, in which the leaves of the upper blade do not lap. It will be remembered, however, that for use in the class of cases for which these instruments are chiefly designed, the slightly increased thickness of the upper blade will not prove much of a drawback, there being always plenty of room and to spare.

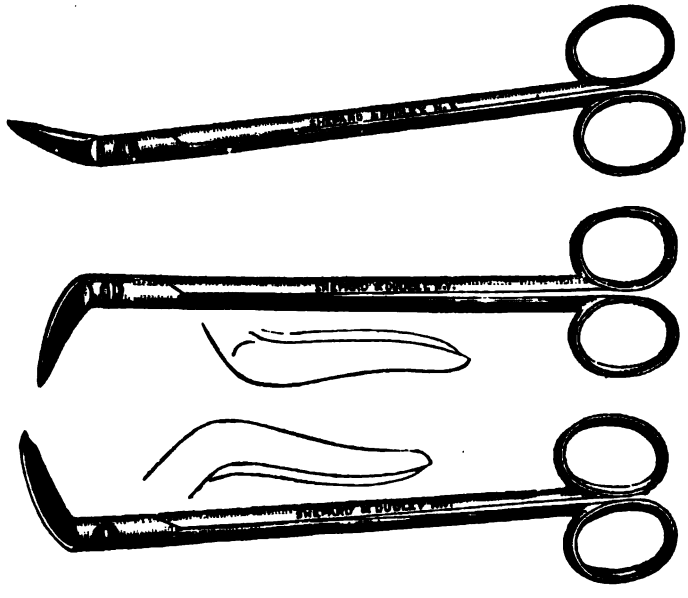
When fully expanded the circumference at the distal extremity of the blades is 12½ inches, and at the proximal end 4½ inches.

SCISSORS DRESSING FORCEPS.

This instrument is the result of a suggestion from my clinical assistant, Dr. J. Weichselbaum, to prevent the loss of time consequent upon the misplacement of the scissors or of laying down the dressing forceps and taking up the scissors. This amount of time, although but trifling in each case, becomes, in a large clinic, quite a serious matter.

I have endeavored to usefully com-

bine these two instruments, by converting the anterior portions of the blades of the forceps, from the rivet to the jaws, into a scissors, which will be found ample to meet all the requirements of the dresser, such as cutting the threads of the tampons, etc.



EMMET'S CURVED SCISSORS.

Some of the curved scissors devised by Dr. Emmet are not as widely known as they deserve; their curves are difficult to picture or to describe, and therefore I lay the instruments before you. From personal experience I can say they will be found most valuable in the various plastic operations of gynecology.

CLOVER'S GAG.

This most useful apparatus supplies the place of two skilled assistants, in perineal operations and all others requiring the lithotomy position. It consists,

1st. Of a pair of combined padded wristlets and anklets by which the wrists are securely attached to the ankles.

2d. Of an extensible bar, having a padded fork at each end with straps and buckles, which is fastened between the knees and keeps them apart.

3d. Of a strap which passes round the body and buckles to each end of the bar. By means of this strap the knees can be drawn up and securely retained in any desired po sition.

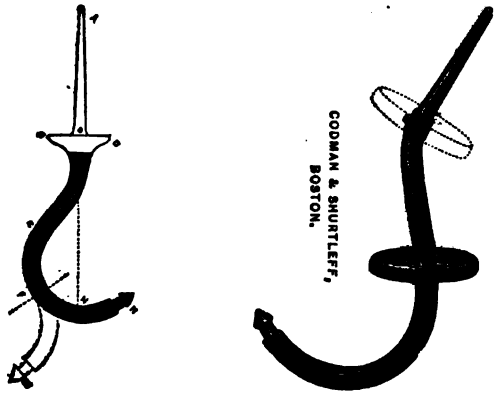
I first saw this apparatus in the Samaritan hospital in

London, in 1877. Since then I have had frequent occasion to use it, and it has always given satisfaction.

I make it a rule never to apply the gag until the patient is at least partially under the influence of the anæsthetic, and always to remove it before the return of consciousness. This for obvious reasons.

CUTTER'S PORCELAIN PESSARY.

Dr. E. Cutter, of New York, has lately brought before the profession a stem pessary made of porcelain. Like other forms of Cutter's pessaries, it receives its support from a band round the waist through a strap passing down the back and between the buttocks.



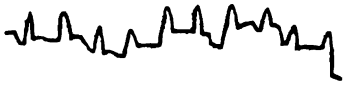
In this instrument the support for the weight of the uterus is furnished by a disk, which is attached to the stem by a bayonet joint, so that it can be unfastened and slipped out of the way to facilitate the introduction of the stem, after which it can be easily replaced.

The late Dr. Sims spoke very highly of this instrument.

SPHYGMOGRAPH.

In the American *Medical Weekly*, August 26th, 1882, page 797, I pointed out the unreliability of sphygmographic tracings for clinical investigation. I then presented two tracings from my own pulse taken within five minutes of each other, and with one of Pond's sphygmographs of the latest pattern, as supplied by Messrs. Parke, Davis & Co.

No. 1 was taken with the adjusting screw turned out so as to require the greatest possible pressure.



No. 2 was taken with the screw run in, so as to require the least pressure practicable.

The rate of traverse was the same in both cases.

I have seen it asserted, that while the height of the systolic line would be changed by variations of pressure, that the sharpness of the systo-diastolic angle would remain unchanged. While this is theoretically true, perhaps, a comparison of the two tracings will show that such is not the case in practice. It will be seen that the angle in No. 1, taken at a high pressure, is acute; in No. 2, on the contrary, the effect of low pressure is seen by the flattening of the angle, until it becomes a line; so also with the curve on the diastolic line ascribed to the closure of the semilunar valves, it is clear and distinct in No. 1, but it is at times almost imperceptible in No. 2. As might be expected, the length of the systolic line varies as the pressure.

That the views here given are not concurred in by other observers is evident from the following quotations from an article by Dr. Granville: "One cause of many troubles," *Brit. Med. Jour.*, No. 1211, p. 507, March 15, 4.

"Now the sphygmograph always shows the state of the arterial contractility as compared with the arterial dilatation caused by the cardiac impulse, and, by this indication alone, we can judge whether the vaso-motor centre is doing its work. In practice I find this one of the most valuable tests of the state of the organism, especially in relation to "irritability" and impairment of brain and nerve nutrition. The indication for nerve tonics, more particularly such as nux-vomica, phosphorus and the *red* cinchona bark, is significant when the arterial wave marking on the tracing is abnormally slight, or as often happens scarcely discernible. This may seem a rule-of-thumb method of selecting a remedy, but it works excellently well in practice; and whether the patient be depressed or irritable, whether he appears to suffer from capillary congestions of the atonic sort, or from disturbance almost amounting to local "inflammations," the tonic plan of treatment nearly always affords relief. On the other hand, a very high arterial wave-marking if only its subsidence be sharp, indicates both want of tone and excessive excitability of the vaso motor centre, calling for the combination of some sedative with the tonic."

While acknowledging the great practical value of such a guide as Dr. Granville suggests, I must disagree from his conclusions as to it having been found in the sphygmograph. As at present constructed I look upon this instrument as untrustworthy.

NOTE.—I regret that the engraver has not accurately reproduced the figure No. 2. In the original tracing the apices were flat and about 1-16 inch wide.

SYRUPUS CALCIS U. S. P. AS A LOCAL APPLICATION.

While by no means oblivious to the value of the lotio nigra and the lotio flava, the active element therein has for many years been with me a matter of investigation, which led me to the employment of the aquia calcis with which I obtained favorable results; it has been employed pure and in various combinations with alcohol, peroxide of hydrogen, etc. The weakness of the solution and the uncertainty of its strength, led me to the use of the syrupus calcis, which has yielded valuable results.

Not the least useful of the properties of the syrupus calcio is its power to dissolve the tough tenacious mucus with which in many cases the os is plugged, and the intravaginal portion of the cervix coated, hindering if not entirely preventing the action of local applications.

A pledget of absorbent cotton, being moistened in the syr. cal., is passed over the diseased surface until it is perfectly clean, when it should be dried, and any topical application desired can then be made.

Sometimes the action of the syrup is so energetic as to bring on a little capillary oozing; this is easily checked with dry absorbent cotton, and is often apparently rather beneficial than otherwise, by relieving to some extent the cutaneous congestion.

The strength of the syrup may be varied according to the judgment of the attendant, to suit the requirements of the case.

I would strongly recommend to the gynecological world the use of this preparation, confident that it will prove as serviceable to them as it has been to me.

LOCAL APPLICATION OF SYRUPUS CALCIS TO SPECIFIC ULCERATIONS

By the term specific ulcerations, primary or secondary, I desire to express any form of venereal sore as hard chancre, soft chancre, etc.

To any and all of these, no matter where situated, the syrupus calcis, properly diluted, has proved an excellent application; it seems to destroy the specific character of the sore, promoting granulation and healing. When applied too strong the application is painful, but when diluted it need not be unpleasant. *Simple ulcers* treated with the syrupus calcis applied locally, have been found to be particularly benefited by the application. The same is true of several forms of *skin disease* in which it has been tried.

The subject of the local applications of the syrupus calcis is too extensive to receive here the notice it deserves. It is my present intention, therefore, to make it the subject of a separate paper to be presented to the profession on some future occasion.

ANTACIDS IN THE TREATMENT OF CERVICAL EROSIONS, ETC.

Already I have alluded to the use of lime water and of syrup of lime in the treatment of this class of maladies, and in a former report I spoke of the use of oxide of zinc.

I am now engaged in pushing these investigations further so as to include all substances capable of neutralizing an acid, such as alkalies, alkaline earths, and some of the metals, perhaps either pure or in a state of weak chemical combination.

Among others tried is the saturated solution of caustic baryta, which acts well.

I hope to bring this subject forward more prominently and in more extended form on a future occasion.

PEROXIDE OF HYDROGEN.

In a paper published in Gaillard's *Medical Journal*, January, 1884, of which reprints have been sent to each member of this Association, I endeavored to indicate the value of peroxide of hydrogen in the treatment of diphtheria.

In various forms of uterine and vaginal diseases, its use has proved decidedly beneficial; also as an application to abraded, ulcerated and pyogenic surfaces anywhere. It thoroughly cleanses the part to which it is applied, destroying all bacterial forms and promoting granulation.

Chancres treated with resorcin and washed occasionally with peroxide of hydrogen have healed kindly.

RESORCIN

has proved a valuable application to specific and non-specific sores of various kinds. When applied undiluted its first effect is to whiten the mucous membrane which it touches, destroying the epidermis, which peels off after some hours, leaving an abraded surface which heals kindly. It is evident from this action of resorcin that it should be allowed to touch the normal mucous membrane as little as possible, unless it has been well diluted.

As an antiseptic dressing in combination with glycerin, (ʒs to ʒxvi) I have found it useful. See ante.

BETA NAPHTHOL.

This agent has been tried very extensively in many ways. As a wash in water, in which it is but sparingly soluble; as a dressing dissolved in glycerin, in which medium it dissolves in the proportion of two drachms to the pint; as a powder diluted with various inert substances: as an ointment in a variety of vehicles, in cotton, lint, etc.

Its powerful antiseptic properties, coupled with its almost entire want of odor, makes it a most valuable agent, lacking the causticity of carbolic acid; less irritating than resorcin, it combines the useful properties of both, while it is an apparently better antiseptic than either.

A dressing moistened with a one half per cent. glycerin solution of naphthol, has been often retained in situ for a week without showing any evidence of decomposition.

Its use in skin diseases is already well known; in gynecology it will replace the other members of the same series to which its action assimilates.

As a spray it can be used dissolved in alcohol, sulphuric ether or chloroform, in the two former of which naphthol readily dissolves.

NAPHTHALIN

will be found a valuable application in the same class of cases, and in the same way as resorcin, naphthol, etc., but its exceedingly unpleasant odor seriously curtails its sphere of usefulness.

APOMORPHIA

is deserving of much more general use than has been accorded to it. If carried regularly along with the hypodermic syringe, and used as freely and frequently as morphine now is, the results attained will be equally as satisfactory, and it will be found to be an able lieutenant in many cases, while in others, in which morphine is now often administered, the apomorphia will be found to yield much better results.

The class of cases in which apomorphia will be found most useful are those in which there exists muscular spasm from any cause, or high arterial tension, or reflex nervous

symptoms from gastric, intestinal or other irritation, such as headache or convulsions. This field might be extended to greater limits, no doubt, but enough is here indicated to point to an area of much greater usefulness than is now assigned to it.

Wherever emesis, with its accompanying relaxation, is indicated, there is the place for apomorphia. How many times is the useful old fashioned emetic omitted simply because it is not at hand, or because the patient objects to the nauseous dose! With hypodermic medicines these difficulties vanish. The popular notion that hypodermic injection means morphine, coupled with the similarity of the name itself, come to our aid and a hypodermic of apomorphia with or without a proportion of morphine, as may be deemed most advisable, is readily accepted.

In carrying hypodermic medicines (which, by the way, I have always at hand), I prefer to have them in powders, as being more portable (unless one has a regular pellet holder), and I take the precaution of having each medicine put up in a differently colored paper; thus, for morphine I use white and for apomorphia green. I cannot approve of the method of carrying the medicine in bulk and guessing at the dose · this is, I think, a practice not unaccompanied with danger, or to say the least, all available means of securing scientific accuracy have not been employed when that plan of procedure is adopted.

KAIRIN.

This new remedy I have used in all diseases accompanied with rise of temperature to 105° and upwards, and so far with satisfactory results. None of the unpleasant effects, such as collapse, which have been recorded by other observers, have occurred in any of my cases, although I

have given it in large doses, as much as five grains every two hours to a child four years old, five grains every hour for twelve doses to a child of ten years of age, and fifteen grains to an adult, discontinuing the medicine when the temperature fell to 100°F.. to be again resumed when the heat shows a marked tendency to increase.

Many diseases have been proved to be of bacterial origin. Bacteria require for their development suitable sustenance and a proper temperature; these being present there comes into play a certain periodicity of germination which exercises a notable influence upon the phases and phenomena of the disease. Increase in the deposit in diphtheria is usually accompanied by an exacerbation of fever, and observers of the life history of the filaris sanguinis hominis relate some curious circumstances connected with the multiplication of this parasite.

Even in the presence of an appropriate nutrition, the rapidity of bacterial development will be checked by a decrease of temperature. The immediate effects of a few bacteria will be to cause a slight rise of temperature, and this very elevation of heat quickens microbic life which would probably, in most cases, go on until the food supply was exhausted.

There are then three methods of controlling the multiplication of the microbes: First, removing from the system such elements as are essential to their existence. Second, saturating the system with an antiseptic, *i. e.*, an element in the presence of which bacterial life ceases. Third, lowering the temperature so that microbic multiplication is retarded or entirely stopped.

It is the last indication which kairin seems likely to fulfill.

MICROSCOPIC EXAMINATION OF URINE.

Although every case of albuminuria is looked upon by the medical attendant with suspicion, he of course is not certain of his diagnosis until he determines the presence or absence of ureal casts by microscopic examination. This for optical reasons is often a matter of great difficulty, requiring considerable manipulative skill and keen vision. To overcome this difficulty by staining, is a plan which has been carried out more or less successfully by many investigators for a long time, but the task which I set for myself was to find a method of staining which could be done rapidly and easily, so as to be available to the busy practitioner, and which would, at the same time, possess some degree of permanence.

First I tried vegetable dyes as turmeric, sandurs, alkanot, etc., but meeting no success, I abandoned the whole class. Next came the carmine series with no better success. Osmic acid was given up on account of difficulties in its manipulation which were sufficient, in my judgment, to render its use unadvisable.

The aniline series next received attention, and here were to be recorded a number of successes, and not a few failures. The full records of these trials will be given on some other occasion; for the present I will advise the use of the *hydrochloride of rosanilin* as a stain. Not only does this dye color the casts and other morphological elements beautifully, but it also possesses a certain antiseptic property which prevents decomposition for some time.

In practice I make and keep on hand a filtered saturated watery solution of hydrochloride of rosanilin, which is added to the fresh urine in quantity sufficient to stain the liquid to a light claret color. The stained urine is then set aside

to precipitate for twelve or twenty-four hours, so that the precipitation and the staining go on together. The precipitate is then ready for examination, and will be found to contain all the morphological elements elegantly colored. If it is desired to preserve these forms, it is only necessary to add to it an equal quantity of glycerin, and lightly close the containing vessel with a little loose cotton, so as to permit evaporation to go on.

In warm weather it may be difficult to prevent decomposition of the urine while it is being accumulated. A few lumps of gum camphor, which is always at hand, can be put into the vessel and will greatly retard the process of decomposition.

It must not be forgotten that bacteria quickly attack the casts and destroy them, so that it is important to prevent their development, if possible.

I must not omit to mention Parker's stain, a solution of alum and logwood. One of the chief objections I have to this stain, is that it precipitates the albumen to such an extent as to considerably impede the microscopical examination.

The urine of cystitis is frequently difficult to examine on account of the agglutination of the mucus it contains. This may be prevented by adding glycerin to the urine, which may thus be stained and set aside for precipitation.

TESTING URINE FOR ALBUMEN.

Quite a number of papers have appeared during the past year upon this subject, many of them by Dr. George Johnson, of London, England, on the use of picric acid as a test, for which I understand Dr. Johnson to claim originality.

According to Dr. Millard, M. Gallipe first suggested the

picric acid test in the French journals about 1872 (Bright's Disease, p. 59).

I have before me a pamphlet by Dr. Esbach, which I received from the author when in Paris in 1878, since which time I have used this method a great deal.

(Dosage pratique de l'albumine methode des depots par le Dr. Esbach, Chef des travaux chimiques a la Clinique de l'hopital Necker. Quatrieme edition. Abrigee, Paris, 1878.)

Esbach's reagent is made as follows:

1. Dissolve 10.5 grammes of picric acid or cabazotic acid in a liter of hot water.

2. To some glacial (*crystallizable*) acetic acid, add water until the density by the urinometer is 1.040.

The reagent is composed of 900 parts of the first solution, and 100 parts of the dilute acetic acid.

It is intended that this reagent shall be used with a graduated test tube, specially made for the purpose by Brewer Bros., by which the coagulated albumen is measured after precipitation for twenty-four hours. The proportion of re-agent and urine used is about equal.

This brings me to speak of the

METHODS OF ESTIMATING THE QUANTITY OF ALBUMEN IN URINE,

Of which four are known to me:

1. By coagulation, filtration, drying and weighing. This is the most accurate and the most troublesome.

2. By coagulation, precipitation and inspection and measurement of the precipitati.

The practice of this method requires much time and care. Esbach allows the urine to settle for twenty-four hours while, as a matter of fact, the condensation of the precipitated albumen will continue for several days. I have seen

the same sample of urine showing fifty per cent. of albuminous deposit, after twenty-four hours settling, register but twenty-five per cent. after a further rest of ten days.

3. By chemical reactions with standard test solutions after the model of Bodeker. (Neubauer and Vogel on the Urine, p. 222.)

4 By coagulation and the estimation of the resulting opacity. This is the least reliable of any of the methods mentioned but it is the quickest, and for that reason may prove useful.

In carrying out this method I have, since 1881, made use of Heeren's Pioskop, an instrument originally devised for estimating the richness of milk by its opacity. This instrument is, however, only applicable to fluids very rich in albumen. I have also adapted Nachet's chromometer to the same purpose.

Another very convenient arrangement may be made by looking down through a column of the prepared urine at a previously marked surface, adding gradually to the length of this column until the markings disappear. The length of the column will then indicate the proportion of albumen. The flat bottomed tube accompanying the urinometer answers very well for this purpose. Similar proportions of standard reagents must always be employed, and the tube should be previously graduated by using a turbid solution of albumen.

Dr. George Oliver determines the degree of opacity by "the visibility of printed lines of different thickness as seen through the opacity—each line or group of lines indicating a nearly definite percentage, and the opacity being reduced by a fixed rate of dilution until the lines are visible through it, and then the amount of albumen present is calculated upon the amount of dilution required to bring

it to the known standard of opacity." (Squibbs Ephemeris, vol. 4, No. 2, p. 492. Practitioner, Feb. 1884 p. 91)

In using any of these tests by opacity, the fact that the albumen is constantly gravitating must not be overlooked, although this, perhaps, makes less difference in those in which the column is inspected in a perpendicular direction than in those in which the opacity is estimated by viewing it horizontally.

CHROMIC ACID TEST.

While making some experiments upon the preservation of urine for microscopical purposes, I noticed the activity of bichromate of potassa in precipitating the albumen of albuminous urine. This led me to try chromic acid as a test for albumen. In many respects the results were satisfactory, but the causticity of the reagent and its difficult portability led me to abandon its use several years ago.

OLIVER'S TEST PAPERS FOR ALBUMEN AND FOR SUGAR.

The idea of saturating paper with the tests to be applied for the detection of albumen and of sugar in urine was brought forward by Dr. Oliver during the past year.

On Bedside Urinary Tests, by Geo. Oliver, M. D.. Lond. Lancet, Am. Rep. April 1883, p. 219.

On Bedside Urinary Tests, Detection of Sugar in the Urine by Means of Test papers, by Geo. Oliver M. D. Lond. Lancet, Am. Reprint, August, 1883, p. 132.

"URINARY TEST PAPERS."

No. 1. *Albumen Precipitants (Qualitative)—The Mode of Testing.*

Extracted, with the Author's permission, from "Bedside Urine Testing: Qualitative Albumen and Sugar," by Geo. Oliver, M.D., Lond., M.R.C.P., Lond.

No urine, while it remains turbid, should be submitted to the tests, or indeed to any test for the detection of albumen; it is best to remove the turbidity by filtration; this simple

process can, of course, be performed anywhere by a piece of blotting paper, or filtering paper carried for the purpose. If the opacity be due to urates it should be removed by warmth, such as that of a wax match or taper or of a little hot water added to the urine.

The nipple pipette is a most useful article of the bedsides it enables the observer to take up a perfectly clean specimen of urine, perhaps otherwise unprocurable, and to examine separately the deposit, or any particular portion of it.

From thirty to fifty minims of the urine are transferred to one of the short test tubes. It is now rendered strongly acid by dropping into it a citric paper, which may be allowed to remain, or may be withdrawn after the interval of a few seconds. It is not now needful to ascertain if the urine be sufficiently acidified, unless it was distinctly ammoniacal, when at least two citric papers should be used, therefore without delay the test paper selected is allowed to fall into it. A simpler plan, and one which answers almost as well, is to drop both the acid and the reagent papers (or a compound paper) into the urine, so that they may fall together to the bottom of the test tube, or the papers may be placed first in the test tube, and then the urine may be run in. Shaking of the tube is not at all necessary or even advisable, it may now be held in a vertical position, or be set aside for a minute. If albumen be present in small quantity—*e.g.* below a sixth or eighth per cent.—a whitish cloud will very quickly gather about the paper, and will collect at the bottom of the test tube, or in the lower half the column of urine: if there only be a trace, the opacity will of course be slight, and will be more readily detected by intercepting the light by the hand, etc., while, in striking contrast, the upper part of the urine will remain clear. If, however, the albumen exists in larger propor-

tions, it will not usually produce a haze, but will coagulate about the paper and will fall from it in clots. The observer will note the rapid precipitation of it into the lower portion of the urine, where it will gather as a cloud, the density of which will vary according to the albuminous impregnation, while the urine above will retain its transparency. Or, he may now shake the tube, when the urine will become less or more opaque, according to the amount of albumen present. If, on the other hand, the urine preserves its brightness, or if any slight turbidity it possessed prior to the introduction of the test paper is not increased, it may be safely inferred it is free from albumen. The whole proceeding, of course, takes up very much less time than that occupied in reading this description of it. The reaction is practically instantaneous when the urine has been freely acidified prior to the introduction of the test paper. It is, however, not quite so quickly obtained, though the delay only amounts to a few seconds, when, without previous acidification, the compound test papers are used.

Other simple and effective ways of using the papers will suggest themselves to the observer, such as the following:

Those who prefer to develop a zone of precipitation along the plane of contact of a test solution and the urine, can do so by aid of these papers. Two test tubes, or a test tube and a wineglass are required. Into one the reagent paper rolled up is placed with about fifteen minims of water, and, without shaking, is set aside, while a similar quantity of urine is put into the other test tube with a citric paper. After withdrawing the latter, the reagent, now in solution, is taken up by the pipette and is allowed to trickle down the side of the tube, in which it will either glide over the urine, or collect below it. After developing the ring, the two fluids may be shaken together, when the albumen will be more largely precipitated as a milky cloud."

No. 2. Indigo-Carmine Sugar Test.—Directions for use.

Extracted, with the Author's permission, from "Bedside Urine Testing; Qualitative Albumen and Sugar." By Geo. Oliver, M.D., M.R.C.P., Lond.

One of the papers should be dropped into the half-inch test tube, and water poured in to the 50*m* mark; a column one inch in height and half an inch in diameter will thus be produced, and the solution obtained will always acquire the same concentration. Then not more than one drop of the suspected urine is let fall into the tube from the pipette, heat is applied, and on shaking the carmine will dissolve. As with the qualitative testing of albumen, so in that of sugar, a teaspoon can be used instead of a test tube, and the urine can be dropped from the end of a penholder or similar article.

After freely boiling and the appearance of the first change of color, it is advisable to move the tube away from the flame, and merely to keep its contents hot in the higher part of the column of heated air above it. Then all the colors will follow in the order I have given, without disturbance from ebullition, until straw-yellow is reached, providing the amount of glucose present is sufficient to develop all the colors; if not, another drop of urine should be added.

When sugar is present in very small quantities the reaction is delayed, and the contents of the tube should be kept hot for one or even two minutes.

Experiment has shown, that the glucose-detecting power of the test paper is greatly amplified by using in addition (to the Indigo Carmine paper), a paper charged definitely with carbonate of soda; so that, for instance, the traces of sugar, otherwise detectable on adding the second or third drops, may become evident with the first, and then further additions of the urine will advance the reaction.

The test papers may, therefore, be made available not merely for the detection of ordinary diabetes, but for the study of all the variations of saccharoid matter which appear in non-diabetic urine, or in urines which fill the gap between health and diabetes.

A few sodæ carb. papers are now sent out with each box of Indigo Carmine Sugar test papers.

A small tracing cloth envelop is also supplied for carrying a few test papers in the visiting list."

Oliver's test papers are, I believe, now manufactured in America by Messrs. Park, Davis & Co.

TEST PELLETS.

The profession is indebted to Dr. Pavy for the introduction of test pellets. They are of two kinds, one for albumen, the other for sugar.

FERRO-CYANIC TEST PELLETS,

Supply a want long felt by the profession, a reliable test for albumen, which may be carried in the pocket or instrument case without any fear of corrosion, without the necessity of applying heat.

Directions.

Break a pellet in two, or what is better for speedy action crush in a folded paper with a coin from the pocket, and introduce into an ordinary sized test tube. Pour in urine to the height of about an inch, and simply shake freely without heating. If albumen is present, a precipitate will immediately appear, and by allowing the precipitate to settle, an estimate may be formed of the amount of albumen present. By another plan, dissolve a pellet in rather more than sufficient water to cover it, and then pour the

urine gently down the side of the inclined tube, and look at the line of contact of the two liquids for the precipitate. Phosphates are not precipitated, and do not therefore interfere with the validity of the reaction.

THE CUPRIC TEST PELLETS FOR SUGAR.

These pellets represent the ordinary Cupric Test Solution in a solid form, and possess the advantages of being in a dry state, do not undergo change, and are at all times ready for use.

Directions.

Place a pellet in a test tube with about 3 c.c. or rather under a drachm of water. Heat till the solution becomes clear and of a deep blue color. Add an equal bulk of the suspected urine, and boil. The presence of sugar is denoted by the precipitation of the orange-colored suboxide of copper.

These pellets are now made in this country under the name of Fehling's Test; but they are not so carefully put up as the English pellets, each of which is separately wrapped in India rubber.

Pellets by Messrs. Jno. Wyeth & Bro.

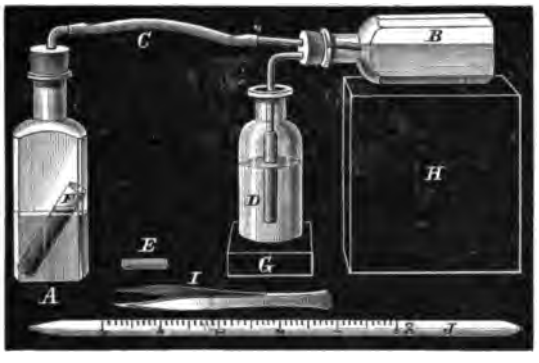
I regret to say that my experience with cupric test pellets has been anything but flattering. I have frequently tried them in saccharine solutions artificially prepared and often with negative results. While their convenience is not to be disputed, their sensitiveness is apt to be impaired by keeping, for which reason they should occasionally be tested in solutions of sugar.

UREA.

One of the most troublesome processes which the physician is called upon to carry on in the clinical analysis of

urine is the estimation of the quantity of urea present. A step in advance has been made by Dr. Squibb, who has devised a cheap and exceedingly convenient apparatus for this purpose, which is worthy of your attention.

After a large amount of work at various urinary tests, I



am fully prepared to heartily indorse the advice given by a recent writer upon this subject.

On the Examination of Urine By A. P. Brown, Ph. G. Microscop. Ball from Phar. Rec.

"When you commence urinary examinations adopt a set of tests to be used and stick to them. You will never accomplish anything by changing from one thing to another."

SPONGE SQUEEZER.

In some operations it is important to have the sponges as warm as possible. In this case they have to be wrung out of water boiling hot or nearly so. To handle them at this time is a matter of great inconvenience, so I have fixed an apparatus like a huge lemon squeezer which is placed over a tin pail. To this squeezer the sponges are transferred from the boiling water by means of a forceps, and being

pressed dry are handed to the operator as hot as can be needed.

COVERED SPONGES.

The impossibility of getting rid of all the sand out of sponges, even with the most persistent shaking, has prompted me to have each sponge enclosed in a lawn covering sufficiently fine to retain the sand. Of course the covering should be changed for each operation. For this method of keeping the sand out of wounds and cavities I would bespeak a trial.

NIGHT DRESS.

The difficulty of changing the dress of very sick patients is such that it is often approached with feelings of no little anxiety. The change will be much facilitated by having the night dress made with a row of buttons down the front crossed by another row running along the inside of the arms from wrist to wrist. When these are unbuttoned the patient lies upon what is practically a sheet, which can easily be removed and replaced by a clean one by rolling the patient on the side, after which the gown is buttoned. With patients too sick to be moved at all, the gown can be reversed and the back left open.

ECZEMA OF GLUTEAL REGION AND OF THE PUDENDA WITH OR WITHOUT PRURITUS

may depend either upon a constitutional disturbance or upon a local condition, or both. In the local treatment of several tedious cases, I derived great assistance from pledgets of cotton, medicated or absorbent, according to circumstances, kept constantly packed into the fissure between the right and left gluteal regions and pressed well against the anus and also between the labia. It seems as if the mois-

ture generated by the irritation fed and stimulated the eczema.

While absorbent cotton is decidedly beneficial the medicated cotton will be found much better. From these carbolic acid, naphthaline, etc., are excluded by reason of their odor, chrysarobin on account of its color; but there still remains quite a number of colorless and odorless applications, such as resorcin, boracic acid, corrosive sublimate, salicylic acid, naphthol, etc., which may be thus applied, but I think my best results have been attained by the use of the naphthol cotton.

PREPARATION.

Naphthol cotton may be easily prepared by dissolving the naphthol in alcohol or ether, saturating the cotton with the solution, and drying of course; the ether process is the most rapid.

During the treatment the parts were frequently washed with *peroxide of hydrogen* solution, which I would strongly recommend as an application in cutaneous affections.

MINUTE INJECTIONS (FOR MICROSCOPIC OR OTHER PURPOSES).

Usually gelatine is employed for this purpose, but the necessity of keeping the specimen warm during the process, and the solidification of the gelatine solution upon cooling, are serious inconveniences and obstacles to success. I was struck with this while engaged in some investigation in Leipsic in 1877, and since then I have used either albumen or casein for the same purpose and with satisfaction. A few drops of glycerin beaten up with the egg will be found an improvement, and either the white alone or mixed with the yolk, may be used, any of the usual coloring matters can be added, and sometimes the addition of a little

water will be an advantage. The whole mixture must, of course, be carefully strained.

Casein will also be found exceedingly useful for this purpose. Condensed milk can be diluted to the extent required and so used.

Of course it is understood that after the injection is complete the albumen or casein is to be coagulated by treating the specimen with suitable chemical reagents, as will be readily understood by the expert.

NOTE—For some of the illustrations in this paper I am under obligations to Mr. J. M. Laflin, Messrs. Geo. Tiemann & Co., Dr. E. Cutter, Messrs. Shepard & Dudley.

REPORT OF SECTION ON SURGERY FROM THE FIRST CONGRESSIONAL DISTRICT.

By BENJAMIN F. SHEFTALL, M.D., Chairman.
Savannah, Ga.

I have endeavored to obtain the coöperation of our physicians as regards reports of cases treated by them in my district, but have failed. But failing in this, I offer as an apology a few cases treated by me, which I hope will prove interesting:

GUN-SHOT WOUND.

Case 1—William E., age 21, sent for me on Christmas Eve night. On my arrival I made an examination; found a gun-shot wound on right breast, two inches below the nipple, the ball passing between the fourth and fifth ribs, and through the lungs. I did not use the probe to look for the ball, for the amount of hæmorrhage and the breathing was sufficient to prove that the ball had wounded that organ. I at once prescribed ergotine, which had the desired effect of arresting the hæmorrhage; but two days afterward, I was sent for, being told that William was dying; that he was vomiting blood. I ordered them to give the prescription that I left until I could get there. On my arrival I was pleased to see that the hæmorrhage was again arrested, but my patient was very weak; called in Dr. B., in consultation. We agreed to use ol morrhœ, tablespoonful doses, with five drops of terebinth, three times a day for one week. Afterwards he was spitting up large quantities of pus or blood. On the 15th day of January my patient said to me, "Doctor, I feel something hard in my back." I made

an examination and found the ball encysted in a sack of pus near the vertebræ. I extracted the ball, a No. 32. From that day my patient improved, having had four severe hemorrhages prior to that date. I discharged the patient on the 1st day of February, 1884, well.

GUN-SHOT WOUND, TETANUS, AND AMPUTATION.

Case 2—Frank H., age 18, from the country, was brought to the city, and placed under my treatment, with a lacerated wound of the right foot, who was shot with a musket loaded with small pieces of lead. I examined the foot to find out the extent of the injuries; found that the bones of the foot were mashed as if they had been powdered in a mortar. I removed as much as I could of the jelly-like substance, and used the general treatment required in such cases.

I called in Dr. B., to consult with me whether to amputate the foot. We agreed to perform the operation, but the patient objected, saying, "that he would rather die than have his foot cut off." Nine days after the accident tetanus set in. After using various treatments for two days, seeing my patient sinking, I determined to use the knife; I amputated the foot above the ankle and, to my suprise, my patient recovered. Six weeks from the day of the accident he was able to return home.

REPORT OF SECTION ON GYNECOLOGY FOR THE THIRD CONGRESSIONAL DISTRICT.

By T. F. WALKER, M.D., Cochran, Ga.

I cannot conceive how I could better discharge my duty as one of your committee than in the history and recital of three cases which I select, not on account of any pre eminence in treatment or self-advertisement on my part, but for the novelty and rare occurrence of such cases.

Case 1—Jane Henderson, (col), age 22, eight and a half months in gestation, summoned me on January 9th, when I found her in the following condition: Circulation, 142; temperature, 105°; abdomen tympanitic and excessively sensitive over every portion covered by the peritoneum, slight delirium, intense anxiety, no uterine contractions, some vesical tenesmus, bowels solvent from a dose of castor oil, restless, unable to sleep. Diagnosis, peritonitis; prognosis, proximate dissolution; prescribed anodyne sedatives. Visited her again in four hours and delivered her, while insensible, of a child apparently dead for two days. She made no complaint at uterine contractions, there was but little hemorrhage and death ensued in about three hours.

Case 2—On March 30th, at five o'clock A. M., Mrs. Malsby was delivered of a fine, perfectly healthy and well developed female child. Nothing unusual occurred, except that a few hours afterwards there was a slight bleeding from the chord which was promptly relieved by tightening the ligature. On the night of April 1st, two days afterward, the infant began to vomit putrid and most offensive smelling blood clots and liquor sanguinis.

The pulse was good, and no emaciation was apparent, the child seeming as vigorous as at birth. The very frequent emesis emitted the cathartics that I administered, and I resorted to rectal enemata, which caused a cessation of the ejection by the mouth and terminated the disposition of the same character of matter per anum.

The quantity discharged, of sanies by the two exits, was all of three gills. The mother and babe have been and are still in perfect health. The labor was natural, head presentation, position second, *a la* Meggs. Post portum hemorrhage was normal, secundines delivered from vagina promptly, and nothing unusual was observed in the whole conduct of the parturition. I am at sea in attempting to account for this amount of decayed blood from a perfectly healthy child.

Case 3—Mrs. ——, four years ago, had a tedious labor, wherein the head was engaged in the upper portion of the inferior strait for thirty hours. She was a primipara. The long continued pressure resulted in extensive sloughing and a vesico vaginal fistula, which was successfully operated on a few months afterward. On April 5th, inst., Dr. T. D. Walker and I were called to attend the lady in her second confinement. The cicatrix extended entirely around the vagina just below the pubic arch, and was firm and intensely tender to the "*touch.*"

The progress of the labor was natural but very slow, and the lady's travail was indescribably agonizing, being somewhat reluctant to the chloroform, which she would inhale too sparingly for any good.

The cicatrix gave way gently but slowly, without any laceration and the vertex could be circumscribed with the finger, and the prospect of an early termination of the delivery was altogether flattering, until the presenting scalp

touched the labia minora, when, with the rapidity of thought, the wall of the vagina, where the hymen had attachment, seized the scalp with the force of a powerful vise. The agony now became intolerable and the lady submitted to complete narcotism with chloroform, and in one hour the infant was born, and after breaking down an hour glass contraction, the placenta was removed and the delivery made complete without any accident or laceration.* The mother and child are doing well.

REPORT OF THE SECTION ON GYNECOLOGY FOR THE FIFTH CONGRESSIONAL DISTRICT.

BY T. S. POWELL, M. D.,

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The body of this Report was read before the Association at the meeting held in Atlanta, 1882, and through the kindness of the secretary was left in my hands for completion, and by reason of unavoidable circumstances was not forwarded in time for the copy of the Transactions of that year. It is now presented with the addition of a few cases as illustrative of facts and principles therein contained.

It would be difficult to frame a report upon Gynecology without recurring briefly, at least, to the history and advances which have been made in this interesting branch of study. I do not, however, propose to dwell upon its history farther than to state that those in the profession who have not had their attention specially directed to this subject will be surprised to hear that gynecology, which is so frequently alluded to as of very recent origin, really dates back to a very remote period.

It is affirmed that the treatment of uterine affections, by methods and appliances similar to those now in use, were probably practiced by the ancient Greeks, who, perhaps, derived their knowledge from the Egyptians. There is no doubt that specialties then prevailed, a fact mentioned by Herodotus, who remarked, "that each physician applied himself to one disease only and not more," and that there

were physicians "some for the eyes, others for the head, others for the teeth, etc."

I am not aware that there is any ancient literature upon the special subject of Gynecology, previous to the time of Hippocrates. He writes of menstrual derangements, metritis and uterine displacements as far back as 400 years before Christ. And there is reason to believe that much of his information was derived from writings made long previous to his day.

From the time of Hippocrates to about 600 years after Christ, a considerable knowledge of uterine disorders existed as we learn from Ætius, who compiled the views of those writers who lived between the time of Hippocrates and his day—a period of 1,000 years previous to the sixth century. Ætius speaks of sponge tents, speculums, caustics, uterine sounds, pessaries and vaginal injections.

Galen, in the second century, mentions the speculum. Columbat says that the ancient Greeks make use of air pessaries.

Thomas alludes to them and many other facts in a historical sketch in his work on Gynecology, and remarks: "Although these facts prove that the physicians who flourished from the foundation of the Greek School of Medicine, 400 years before Christ, to the dispersion of the Alexandrian School by the Saracens, 640 years after Christ, were well informed in gynecology, and were familiar with means of investigation which were subsequently lost, or ceased to be appreciated, it must by no means be supposed that their knowledge was of the same exact and scientific nature as that which has prevailed since the modern introduction of the speculum. The ancients did not sufficiently separate inflammation of the pregnant and non-pregnant uterus, but confounded affections of that organ with those of the

pelvis and areolar tissue; and they made no distinctions between mucous and parenchymatous metritis, and morbid states of the neck and body. Among their remedies were numerous articles which to day we regard as inert or even injurious."

In 1683 Ambrose Pare and Scultetus describe the speculum, and give drawings of the instrument. Scultetus mentions both *anal* and vaginal speculums which were obtained from the ruins of Pompeii.

We are told that Recamier, a Frenchman, discovered the speculum early in the present century, and that he brought the instrument to the notice of the profession in 1818, and he has been cited as the discoverer of the instrument in the face of the historical facts to which I have alluded, and has been pronounced the founder of modern gynecology.

He cannot, says Thomas, with propriety and truth be considered the discoverer of the instrument and of gynecology; but it may be claimed for him that he "recognized the value of what was well known but badly appreciated before his time."

The use of the speculum in modern times may be said to have been first practiced by the French, then by the English.

Leeches to the uterine neck were first suggested in a paper by Guilbert in 1843. Sir James Simpson, of Edinburgh, gave a decided impetus to gynecological study and practice in England. He wrote several able papers on uterine affections. Shortly thereafter Dr. Bennet, of England, issued a work on uterine inflammation, which attracted much attention, not only in his own country but also in the United States. His work was specially important from the fact that he directed the mind of the profession to the follow-

ing points, now generally accepted by the gynecologist: First, that inflammation is the *primum mobile* in uterine affections, and that from it follow as results, displacements, ulcerations and affections of the appendages. Second, that menstrual troubles and leucorrhœa are merely symptoms of this morbid state. Third, that in the vast majority of cases inflammatory action will be found to confine itself to the cervical canal, and not to have affected the cavity of the body. Fourth, the propriety of attacking the disease in its *habitat* by strong caustics.

After Bennet's work a number of writers contributed to this subject, and considerable discussion has prevailed upon uterine affections up to the present day. Among the latest and most approved writers in our country may be mentioned Thomas, Meigs, Barns and others.

From these may be derived certain pathological principles and methods of practice which are considered as more or less definitely established and adopted. The specula, sounds, and other appliances are very numerous both in this country and in Europe, and so varied and expensive is the outfit for what is now considered the proper practice in this department, that this class of cases has, we may say, from necessity, largely fallen into the hands of specialists.

The pathological principles above referred to have been formulated by Prof. Thomas as follows: First, that inflammation is the starting point of most of the affections of the uterus, and that a large number of evils follow this morbid state as results. Second, that uterine disorder is dependent upon a constitutional derangement, and would yield without other treatment than that directed to the removal of the general condition. Third, the view of Dr. Bennet, which is similar to the first mentioned, with this

additional point, that metritis generally limits itself to the neck, and only exceptionally affects the body.

Fourth, the view of Dr. Tyler Smith, that leucorrhœa arising from glandular inflammation in the cervix, is the cause of granular degeneration of this part, and of subsequent engorgement. Fifth, the view that uterine disorders often, if not generally, commence in displacement, which is a primary and not a secondary condition, and that to relieve the train of morbid symptoms the exciting cause should be first removed. Sixth, that uterine disorder is commonly the result of ovarian inflammation, which reacting on the womb, is the prime mover, in many cases, of its morbid states.

These several theories taken separately will not suffice to account for the various affections which prevail and which are classed under the head of gynecology. They are all true and applicable to certain cases, and untrue in regard to other cases; or the one may apply to the case of one patient, and another may be the cause of a similar condition in another patient, as will be seen in the facts contained in the cases hereinafter reported.

The first of these positions, which attributes most of the affections of the uterus to inflammation, I do not adopt. If the congestion, which always precedes inflammation, had been named it would be nearer the truth, and yet in many instances the congestion itself may be due to displacement or other causes. To define the true cause and diagnose the true condition of uterine disorders, is the great secret of success in the treatment of these affections.

While our standard authors in gynecology are mainly relied upon by the profession for suggestions and methods of treatment, yet much is to be found in our current medical literature upon these subjects, which leads to experi-

ment and progress, especially in the use of new appliances. While this is true of the progress of gynecology, yet there is much that is unsettled, and many points upon which little is known, both as regards the pathological principles announced and the practices adopted.

The papers which, from time to time, are brought out by the plan of sections, as adopted in our associations and societies, by eliciting new views and provoking discussion upon contested points and practice, are well calculated to further medical science in its various departments, and in no branch has more interest been excited, or more rapid advances made, than in the section on gynecology.

The record of cases in medical journals, in connection with the discussions often provoked, thereby leading to the presentation of the same question from different stand points, serves to elicit thought, and to call forth practical deductions. While no one paper is full or satisfactory upon all points, yet together they aggregate much that is useful and progressive, and thus we continually approximate if we do not attain to absolute truth. While it may be affirmed that, in respect to the principles of this particular branch, little is known beyond that which the ancients possessed, yet, each new observation which is made, though it may not announce a new discovery, still may serve to bring into bolder relief principles already proclaimed, and to place upon broader and more satisfactory grounds the methods of treatment required.

The plan of Sections has proved most available and satisfactory, from the fact that the sections are largely composed of specialists, and of members whose tastes or superior attainments in a particular line naturally incline them to attach themselves to the branch of their choice, and in the discussions of which they take greater interest and are better qualified to participate.

The advantages thus resulting from the plan of sections would seem to furnish an argument in behalf of specialism, the ethics of which has been in time past called in question. Indeed, the adoption of the method of Sections is, in principle, at least, an indorsement of specialism. That specialism has been abused by mountebanks and quacks cannot be denied, yet it must be conceded that the progress of gynecology and other special departments have been greatly promoted by the zealous investigations of eminent men in the profession, who, from taste and peculiar fitness, have devoted themselves to special lines of study.

We would not be considered the advocate of a specialism which ignores the importance and necessity of a thorough general knowledge of the principles and practice of medicine. It were well in every case that the party who proposes to devote himself to a specialty, especially in gynecology, should first be thoroughly grounded in general principles, including medicine and all its collateral branches, and that he should for a time engage in active general practice before devoting himself to the specialty.

The fact that quacks have advertised themselves as specialists, and have greatly abused the system of specialism, and threatened to bring it into disrepute, is not a legitimate argument against an educated recognized specialist, any more than is quackery in the general practice an argument against recognition of the true and scientific general practitioner.

The complaint that specialism places the general practitioner at a disadvantage, and seriously absorbs his business, and that specialists are disposed to *vaunt* their superior knowledge to the public to the injury of the general practitioner, has been urged against specialism. It must be admitted that in some instances this has been done, and that

there appears to be a growing assumption on the part of specialists to claim and exercise prerogatives inconsistent with the code of ethics, and which would not be considered legitimate in the general practitioner.

One of the special prerogatives here referred to is the voluntary preparation and distribution of pamphlets to the non-professional public, designed to make notoriety and secure practice. This is frequently done with impunity by those who occupy high position, and who belong to our medical societies. A true regard to the ethics would perhaps forbid the distribution of papers and circulars other than those written by the appointment of societies, or prepared for legitimate medical journals. This, of course, does not apply to books or publications designed to instruct the masses in such knowledge as will promote their physical, mental or moral good, and which will tend to impart a proper conception of the high mission and great importance of the medical profession.

A true and honorable specialist is not one who, without study and without careful and persevering investigation, enters a community and publishes himself as a specialist through newspapers and circulars. Such men can only be classed as quacks, wholly unworthy of the confidence of the people, or of the honorable members of the profession. But the man whose taste inclines him to a particular branch, and who, having first thoroughly posted himself in general principles and practice, takes up a particular branch and devotes himself to it by long and close observation, and who so practices it as not to trespass upon the rights of the general practitioner, but rather to co-operate with him, extending all proper recognition and professional courtesy—such a man is worthy of recognition, and to such men the general practitioner can safely trust his patients

and his reputation, and such men occupy high and useful positions to both the public and to the medical profession. The general practitioner not being prepared in every instance to furnish the proper treatment, is glad to know a well-qualified specialist to whom he can recommend his patients, and in thus referring his patients to one possessing superior facilities, he does not necessarily disparage his own ability, but rather establishes himself in the confidence and respect of his patients; and the specialist should see to it that the reputation of the general practitioner is thoroughly and carefully protected.

In treating diseases peculiar to woman, the physician should thoroughly appreciate her as one of her sex, and have that high, exalted estimate of woman's nature, character and God-ordained position in the world which the Creator intended her to fill, especially in her approximate relations to man as her unfailing friend, support and protector.

It is important that the physician should understand not only the true position and the mission of woman as a woman, a wife and a mother, physically, but also as being differently constituted from the other sex in many of her moral, mental and spiritual conditions.

As her body is composed of finer material than man's, her brain, muscles, nerves, and all her physical organization, though instinct with great vitality, are of more delicate structure, so her moral and emotional nature presents different aspects in contradistinction to those of man. But there is also a difference to be noted in the cause and effect of female diseases as developed in women of opposite mental and emotional characters.

The illiterate, hardworking woman does not require in every respect the same treatment in all of her peculiar diseases as the woman of education and refinement; neither

is it probable that the cause of the abnormal condition of the former proceeds from the same source or sources, as that of the latter.

And, in treating cases like this, the woman of a hopeless, desponding nature, who broods over her affliction, and keeps her mind's eye upon the clouds all the time, instead of their silver lining – she must have a different course of *mental* treatment; there should be a greater variety in the environments of her cure than is absolutely necessary in treating her sister whose disposition is so cheerful, so hopeful and buoyant, and whose thoughts instinctively turn to the bright side of everything in life and perforce, of her own diseased condition.

I consider a thorough and intelligent knowledge upon these points essential in the treatment of all diseases, especially those peculiar to woman, and this knowledge is also important in preventing as well as in curing disease.

Though this branch of medical science has been too much overlooked by the practitioner, yet I am satisfied it will greatly assist him to establish sound and scientific conclusions in the diagnoses of disease, to better understand pathological causes—the fitness of therapeutic and hygienic methods, and to discover and apply better and more efficient remedial agents. In fact, of so much consideration do I regard this science as a branch of medicine, I think our medical schools should have a department especially devoted to the study of mental and emotional Hygiene.

I believe that the almost universal failure to restore lost reason to patients whose minds have been impaired as a result of uterine disorders, is owing to the lack of information among medical practitioners in regard to the science of man's and woman's mental, moral and emotional nature.

I also believe, from the "signs of the times." that before

many years, as the march of progress tends to higher and more perfect attainments, medical scientists, and a more enlightened public will call loudly for these acquirements in the profession. Then, why should not the regular school, the apostolic representative of medicine, be the first to inaugurate a reform of so much importance and which will certainly be demanded in the years to come.

The knowledge of a patient's mental and physical idiosyncrasies, possessed by the general practitioner, which the specialist has not often the opportunity to know, has been urged as an argument for the better treatment of the patient by the family physician. While there are cases of this character that can better be treated at home, yet there are a great many cases which the general practitioner is not prepared to treat, and which he cannot treat successfully. He cannot do justice either to himself or his patient and attend these cases. A proper sense of justice and kindness to his patient forbids that he should undertake the case. A true physician never in any instance loses sight of the interest of his patient, who is his friend, and it is his duty to refer the case to a specialist on whose judgment and skill he can fully rely.

In, perhaps, no respect is the general practitioner so frequently at fault as in diagnosis, which he fails to make from the want of proper appliances, and for the want of tact in examination and accurate knowledge of the anatomical structure and relations of the pelvic organs.

We have known physicians of large experience and great ability to make the most glaring mistakes in the diagnosis of diseases peculiar to females; for instance, I have known simple hypertrophy, engorgement, or induration of the cervix, to be pronounced incurable cancer. Also a normal position of the womb has in some cases been mistaken for

prolapsus. Syphilitic ulceration of the os is often confounded with simple ulceration. Again, leucorrhœa, which is but a symptom or expression of these and other uterine affections, has led to many errors in diagnosis, even by learned and popular practitioners, for the want of an accurate knowledge of the character and chemical conditions of uterine and vaginal secretions, and the methods for detecting these different conditions, which vary according to circumstances, and with the parts from which they flow.

It is not unfrequent, also, that functional disease is mistaken for organic and *vice versa*.

The following cases will, in a measure, illustrate the importance and necessity on the part of the family physician, in many instances, to refer his patient to a gynecologist. When I say gynecologist I do not mean any and every man who, assuming this as a specialty, claims superior ability and success; for it is a well known and somewhat amusing fact that in almost every community there are those who, being notoriously incompetent in general practice, assume wonderful proficiency in the treatment of female affections, often remarking, "*my special forte is uterine disease.*"

I am here reminded of an instance that actually occurred in Atlanta, in which one of these quacks came before the State Board of Examiners, bearing letters of high recommendation as an experienced "woman doctor." He utterly failed to answer a single question in any department, and when asked by the obstetrician of the board "*where the uterus is located,*" he pulled off his vest and said "*in a woman it is on the side,* but in a man it is right in the *middle of the belly.*" The shock to the gentlemen of that board was great, and the effort necessary to restrain an outburst of laughter was too much even for the aged and dignified members of the body. The obstetrician being a very corpulent and protuberant

man exclaimed with a groan, clapping his hands to his abdomen, "alas for me, gentlemen, I am done for—I know I can never be delivered."

It is a lamentable fact, while we have a few truly learned and able gynecologists in the country, that the great body of the practice in this department is in the hands of parties who have no adequate or proper knowledge of gynecology. It is a distressing thought, that the women of the country have thus fallen into the hands of irresponsible quacks. This is attributable, in a very great degree, to the ignorance of the people and to the inefficiency in diagnosis on the part of numerous medical practitioners. Years ago, being impressed with these facts, I urged the importance of teaching anatomy and physiology in our common schools, in the hope of enlightening the people in regard to their physical structure, and urged upon the American Medical Association the necessity of some action favoring this idea, suggesting that essays be prepared and distributed among the people for their better instruction in regard to medical subjects, and that they may better understand their relations and obligations to the profession, as well as the duties and obligations of the profession to them.

If this were done they would not be so liable to be imposed upon by ignorant quacks, whether they be local or itinerant, and the thousands which are thrown away upon these pretenders would go to the encouragement of the true men of the profession, and the victims of imposture would be delivered from a vast amount of useless injury and suffering.

Case I.—Mrs. A. D., a widow, aged twenty eight, and generally had very good health, very fine looking, large, well developed, beautiful figure. She had boasted of her perfect health until about eight months before I was called to

see her. She was then complaining of a dragging pain in the back and hypergastrium, with some difficulty of micturition. At the advice of friends she had previously employed an intelligent man, but a consummate quack. He had not even read medicine. The civil war left him penniless, so he concluded he would make a support by the practice of medicine, trusting to his general intelligence, extra amount of brass, and the people's ignorance of medical science to steer him safely through his newly chosen career, and ultimately place him high upon the ladder of fame. He opened an office, and advertised himself far and near as a king cure-all of the many diseases to which the female sex fall victims. Of course he was consulted by many from different sections of the country.

When Mrs. D. presented herself to him for treatment he very properly suggested the necessity of a vaginal examination in the upright posture. Right, so far, as it requires such examinations to fully and properly distinguish cases of partial prolapsus.

The standing position, and the excessive or increased weight was perhaps the primary cause of the displacement, and which caused the anterior wall of the vagina to descend and form a bulging appearance, and which this ambitious self-styled "doctor" took to be the womb itself. Also, as the rugæ of the vagina still existing, and, as he supposed, slightly abraded, he diagnosed the case to be ulceration of the os, and applied the caustic in stick laterally from the anterior to the posterior walls of the vagina, entirely uniting them in a perfect seam, commencing just posterior to the meatus urinareous. The patient remained in this condition for several months—of course missing the periodical discharge every time. At the end of four or five months she discovered herself considerably enlarged, which gave

her some alarm. The valiant "doctor" was sent for again. He came, made another examination, and found that he could not introduce his finger more than one inch. So, not being able to find the womb, or what he supposed to be the os, he could scarcely believe it to be the same case he had treated a few months previous. He then paid me a few compliments and advised his patient to send for me, as he would discontinue the case. I was sent for and found the vagina in the condition I have described and like a small cup about one inch deep, and the uterus very much enlarged. In a few days I called with a medical friend, placed the patient in a posture for turning or delivery by the forceps, and with a scalpel I separated the lower half of the adhesion, which permitted the accumulated menses to pass. I then kept the edges apart with cotton saturated with glycerin for a few days; the upper half of the adhesion I left as a support to the prolapsed womb, and which proved a perfect success. By the use of proper injections the uterus was relieved of the congestion, and the lady's health was soon entirely restored. In a short time she was married, and has been living happily for several years. Her husband fully appreciates the fine health of his wife, of which he often boasts, but of course is uninformed of why his family does not increase.

Case II.—Mrs. S., about forty years of age, mother of five children, was tall, had reddish hair, fair complexion, and, a few years before her death, was a large, fine looking and energetic woman. Her first symptoms were small, or profuse hemorrhages, especially after active exercise or after coitus. At first she suffered very little, but as her case developed her pain and her periodical hemorrhage increased, the discharge being of an offensive, watery appearance.

This same notable "doctor," or rather notorious impostor,

was called in to the case, and immediately attempted an examination with a speculum. But not being familiar with the normal anatomical construction of the parts, he was unable to discriminate and classify the structural differences of the various malignant diseases of the womb. Hence he diagnosed the case to be simple inflammation of the os, and applied his stick of caustic with zealous faith in its all-healing efficacy. In a few days he applied it again, and much to his surprise and alarm, he punctured the anterior wall of the uterus, and penetrated the posterior surface of the bladder, when down came a urinary flow through the vagina.

The wise specialist now withdrew his speculum and remarked to the patient's husband, that he could not account for what had occurred.

He again spoke of myself in doubtful complimentary terms, and added: Dr. P. doesn't like me; he calls me a quack, but I believe he knows all about such diseases, and I wish you would ask him to come and examine your wife's case. Mr. S. accordingly came to my office with this request to examine the case with Dr. ———, when I kindly replied, "No. I cannot; but in order that you may understand my reason, I will say this: As you are aware, I am a Methodist in religion, but professionally, I belong to an Association which is controlled by some good old rules similar to one of those which govern the Baptists; that is, their church members are not allowed to commune with those of any other creed; so you go and tell the doctor just what I say, and he no doubt will see the point." Mr. S. did so; the doctor smiled and said, "Dr. P. is right, for I know if he consulted with me it would get him into trouble. I admire his candor, and please go back and tell him I will give the case into his hands." I now went with Mr. S., and after exami-

nation with the speculum, found the damage as I have stated above, and the urine still dripping through the vagina.

The doctor's treatment of the case was based upon an incorrect diagnosis, and this was owing to his ignorance of the late pathological distinctions by which the practitioner is enabled to detect cancer from inflammation, and from not understanding the different elements which are associated to produce a cancerous growth in different forms? In the case of Mrs S., two of the forms of cancer very clearly existed. The posterior neck and lip was soft or encephaloid, the anterior lip and a portion of the neck and lower surface of the bladder were of the colloid form, jelly like; under these circumstances no good could be expected from an operation, or application, hence I advised injections and hygienic treatment, which I found to be temporarily beneficial. Several weeks after Mrs. S. died resigned to her fate.

I could report many cases to show the importance of being able to distinguish between malignant diseases of the uterus, and those of a simple nature, and to discern the difference in the origin of the two kinds of diseases and their diagnostic character. If we would avoid the errors of some of our most distinguished writers on uterine pathology, we must consider that many of the anatomical changes which occur in the cervix are cancerous in their origin, or have become so from inflammatory action, or still further, that cancer in its incipient stage was simple inflammation These frequent errors cause many failures to cure or benefit the patient.

CASE 3—Mrs. F. G., age 36, had been married fifteen years, and was the mother of nine children. Her health had been very good until about two years ago, soon after the birth. of her last child, when she complained of pain in the lower

parts of the abdomen, fullness and heat in the vagina, pain in the lumbar region and adjacent parts; often pain on the top of the head, dyspeptic symptoms, nausea and vomiting, palpitation of the heart, intercostal neuralgia, wakefulness, loss of appetite, mental depression, and hysterical symptoms. When I was called to see Mrs. G. she was suffering much from pain in the back and loins, especially when walking, and pain also in sexual intercourse, which often caused hemorrhage. I was satisfied that her ill health and sufferings were caused by some uterine trouble, and suggested the importance and necessity of investigating the condition of the uterus. I first tried the touch, which detected enlargement. I then used a cylinder speculum, which revealed the os highly inflamed, and filled with a tenacious plug of mucus.

This I removed, then used a bivalve speculum which, when widely expanded dilates the os, and enables you to examine more effectually its true condition. In this case it was so hypertrophied that a small probe could not be introduced, and bleeding followed the slightest touch. I pronounced the case cervical endometritis, with considerable hyperplesia and induration, which, though of long standing, I believe would prove amenable to proper and energetic treatment. I advised a mild but nourishing diet, gentle exercise in the open air, and every means possible to counteract mental depression.

The patient had been taking mur. tinct. iron for several weeks, which I ordered discontinued, as she thought it disagreed with her stomach, and as she had unmistakable evidence of inactive liver, and other complications, which forbade its use. I advised elixir of quinine, strychnine and pepsin. This medicinal tonic treatment was changed several times with a view to the impaired digestion. I

commenced local treatment by applying the solid nitrate of silver, and advised vaginal injections of water moderately hot, twice a day, with a little glycerin and laudanum to be added, should there be any pain in the cervix. The nitrate of silver was applied several times at intervals of eight or ten days, and then Richardson's styptic colloid, composed principally of tannin dissolved in collodion, mainly as an astringent, and to act as a protecting film. Carbolic acid and glycerin were also applied occasionally. At the end of six months the case was perfectly cured, and she went home a happy woman.

Mrs. A. B., age 34, married at twenty-two, has had three abortions and has five living children. She has always been in rather delicate health, and since the birth of her last child has had almost a constant discharge from the vagina, and frequently felt a tumor in each hypergastric region, especially just before her catamenial period. She said that her kind physician said he sometimes thought she had two abdominal tumors, and advised her to go to Atlanta and consult me about her case. When I asked her to describe her symptoms, she replied: Ever since my last abortion I have been declining in health, losing my flesh and color, and with more or less pain in my back and loins, with a feeling of great general exhaustion, loss of appetite, also an occasional chill. For the last eight or ten months all these symptoms have increased, until now it is with great difficulty I can walk around, and do my little house-work. If I have abdominal tumors, and it is necessary to perform an operation, I wish it done as soon as possible.

A vaginal examination disclosed the uterus slightly prolapsed, the os ulcerated, the entire womb enlarged, with a tenacious fluid, a little tinged with blood, passing from the os, all of which I regarded due to an irritated vascular con-

dition of the uterine canal, brought about by the abortions; particularly the last, and which also accounted for the contraction of the abdominal muscles in the form of tumors.

Treatment.—I advised rest and warm injections twice a day; five drops of Donavan's solution of arsenic and five drops muriated tincture of iron in a wine glass of water just after each meal. In six days I examined the womb again and found the irritation much relieved. I dilated the uterine canal with a corn-stalk tent, as suggested by my friend, Dr. W. T. Goldsmith, and applied to its entire surface a weak solution of nitrate of silver, about eight grains to the ounce of distilled water, on cotton wrapped around a pure silver probe. Eight days after made another examination; found symptoms greatly improved, only a slight discharge with no blood; patient's strength and spirits improving, I continued the same treatment, and twenty days later made the third examination. Womb was almost normal, the discharge very slight, general health rapidly improving; in fact, the patient was feeling almost well and has passed through her last catemania with much less pain than usual, though the discharge was rather scant. I now stopped the arsenic and ordered five grains of muriate of ammonia in a wine glass of water just before each meal. I examined the uterus several times during the next sixty days, and applied the nitrate of silver still more diluted, at the end of which time she declared herself well and was dismissed.

If necessary, and was allowed the space, I could report cases to illustrate almost every form and variety of disease peculiar to the pelvic organs, and to show the importance of a thorough knowledge of the anatomical structure of these organs, and which would also illustrate the pathological changes—the general and peculiar pathnomonic charac-

teristics, a knowledge of which is necessary to form a correct diagnosis and to give the best and safest treatment.

Without such knowledge we cannot do justice to the patient, nor to the claims of true gynecological science.

There are so many varieties, changes and grades of uterine affections that numerous errors are unavoidable to those who are not familiar with them. Milder forms of disease are often treated too energetically and severer forms too mildly.

Malignant and incurable affections, not being understood, are often improperly treated, as a result of which the suffering is greatly aggravated and death hastened as shown in the first case reported. If these facts are true, is it to be wondered at that so many of our intelligent ladies hesitate until it is too late before they will submit to treatment, and die a miserable and premature death, and that so many of the less intelligent of the sex flock to the uneducated, boasting pretender for relief.

Is it right women should thus be permitted to suffer and die? If it is not, the duty of the profession is plain; give them more light, instruct them in the proper manner and through the proper channels.

The instruction or enlightenment thus proposed for the people, though certainly militating against the Quack and his pretensions, is not meant in any personal sense and does not imply any jealous assault against them, as some will doubtless claim, but is simply designed to vindicate true science and protect woman—our mother, the last wonderful thought of God, crystalized into a form of angelic loveliness—whose mission it is to cheer and bless, to guide and sustain, electrify and lighten the sin-burdened world of mankind.

REPORT OF SURGICAL CASES.

BY WM. PERRIN NICOLSON, M. D.,

PROFESSOR OF ANATOMY IN THE SOUTHERN MEDICAL COLLEGE, ATLANTA, GA.
MEMBER OF COMMITTEE ON SURGERY, FIFTH CONGRESSIONAL DISTRICT.

Occupying a minor position upon the Surgical Committee, I have thought best to confine myself to a brief description of a few surgical cases selected from a current practice, each of which represent certain principles of surgery. There can be no class of work in which more uncertainties regarding prognosis and treatment arise than in railroad injuries. We are repeatedly confronted by slight injuries which in the end terminate seriously or fatally, while on the other hand, cases presenting the most forbidding appearance make a good recovery. Two cases representing these extremes are presented, and a few others of some practical interest.

AMPUTATION DURING ACUTE GANGRENE WITH SECONDARY HEMORRHAGE—RECOVERY.

J. H. Lewis, white, aged 21, was injured by having his foot mashed by a locomotive. I saw him about thirty minutes after and found the left foot with the following injuries: There was a long rent in the skin extending from a point above the external malleolus, obliquely across the dorsum of the foot in the direction of the great toe. The wound did not extend to this point, but the toe was fractured, and from a wound at its base there was a flow of venous blood. Introducing my finger into the principal

wound I found the skin detached as far down as the edge of the sole, the torsal bones, though not fractured in any case, were torn partially from each other.

Giving the patient the benefit of the doubt, an effort was made to save the foot. The wound was washed out thoroughly with listerine, and the edge having been approximated with silk sutures, the foot and leg were covered with a roller and the patient removed to his boarding house. During the day he was kept quiet with morphia. I was called at night on account of his suffering so much pain in the foot, and finding the reaction considerable, I directed cold applications over the roller. The following day, the bandage feeling tight, the upper portion was removed, and all the folds, where any undue compression was made, were cut. The next (or third) day I removed the bandage entirely and found gangrene already beginning in the toes. The dressings were now changed to hot applications, both poultices and hot fomentations. At this time Dr. G. G. Crawford saw the patient with me. We agreed to await the formation of a line of demarcation, which for several days we thought would take place just above the ankle. The constitutional condition of the patient was exceedingly grave. From the second day the pulse had ranged very high—sometimes as high as 150 per minute—and now there was the wildest delirium, entirely preventing sleep. Morphia in large doses hypodermically seemed to produce but little tendency to sleep. Finally some rest was secured by the use of a combination of bromide of lithium, chloral and fl. ext. hyosciamin. The gangrene now seemed to begin a fresh spread, and the course up the leg was rapid. There now appeared an angry blush upon the thigh about the junction of the middle and upper thirds, and the trouble below was now as high as the tuberosities of the tibia. The constitu-

tional condition continuing very grave we decided that amputation gave the only chance of life, and this was very small.

January 2d, at 2 p. m., the patient being under ether, assisted by Drs. Crawford, Olmsted and others, I amputated in the lower third of the thigh, between the gangrene below, and the swelling above. The tissues were found sound and healthy. There was little hemorrhage, but four ligatures being required. The wound was washed out well with a strong solution of listerine, united with silk sutures supported by adhesive straps, the whole being covered with oakum soaked in listerine; a firm roller was applied. Patient was put to bed and soon reacted well. I saw him late in the afternoon and he was doing remarkably well. About 10 o'clock at night we were called by an urgent message, stating that he was bleeding. Upon arrival we found blood oozing freely through the bandages. These were removed, and the whole wound opened up completely. There was no spouting vessel to be found, the ligatures were all tight, but there was a fearful oozing of blood which would fill up the wound as rapidly as it could be sponged out. After searching in vain for any point that could be ligated, the only accessible hemastatic at hand was a kettle of almost boiling water. A sponge saturated in this, which was too hot to be held in my hand, was literally thrown into the wound, and the flaps drawn over it. The bleeding ceased as if by magic. In the course of an hour it commenced again to a slight degree and was promptly checked by the same means. Some ice now having arrived, I pounded up a sufficient amount to pack the wound full, and this treatment in the hands of an assistant was kept up the remainder of the night.

In the morning the wound was again united by sutures

and dressings reapplied. From this time the improvement was constant, and the patient advanced to convalescence and cure with but one interruption.

About the third week, from no assignable cause the stump, after all the wounds had closed, became inflamed, and several small abscesses formed. Regular poulticing soon reduced the trouble. Of course, it goes without saying that the most sustaining treatment possible was followed during the whole case.

DOUBLE SYNCHRONOUS AMPUTATION OF LEFT FOREARM AND RIGHT HAND, WITH EXTENSIVE SCALP INJURY—RECOVERY.

Frank Jackson, white, aged eleven years, came under my charge January 30, 1884, for the following injuries, received one hour before, by falling from a moving train: the left hand was crushed off just above the wrist; the right hand was crushed obliquely across the palm, leaving only the thumb and a portion of the index finger, and lastly, the most extensive scalp injury I ever saw. There were several wounds sharply cut and communicating with each other, amounting in the aggregate, by actual measurement, to fourteen inches, while in three of the wounds the pericranium was badly severed, leaving the skull entirely bare. The patient being outside of the city, I was compelled to leave him and return for instruments and assistants. A dose of morphine was administered and the family were instructed to give whisky at intervals to bring on reaction. At one o'clock, four hours after the accident, assisted by Drs. N. O. Harris and C. C. Greene, I proceeded to operate, the patient under chloroform (Squibbs'). The injuries w re taken up in the following order: First, the left forearm was amputated, by the circular method, about two inches below the elbow. The wound was washed out thoroughly with

listerine and united with silk sutures. The flaps were then supported by a band of India rubber adhesive plaster, and over this was placed a wad of oakum, well saturated with listerine, which was then covered with a roller firmly applied.

There was so little of the left hand uninjured that, taking advantage of the reporative power of the part, I concluded to simply bring the surfaces together as well as practicable. Two remaining portions of metacarpal bones were disarticulated, and with a pair of scissors the bruised tendons and muscles were cut away, together with some points of skin. Having washed out the sand that was in the wound, the edges were drawn together with silk sutures as well as possible. The point of the index finger was supported with a strip of adhesive plaster. A pad of oakum saturated with listerine was then placed over the wound, and a roller passed tightly over the whole.

The scalp injury was so extensive that it was hard to determine where to begin. First, as carefully as possible the dirt and sand was washed out of the wounds, and as the scalp in several places was torn away from the skull, this was a difficult task. The whole wound was then washed out thoroughly with the antiseptic, and the edges were drawn together with silk sutures, endeavoring at the same time to draw together the torn pericranium. When the wounds were finally united by, I know not how many sutures, I placed over the whole four folds of old linen saturated with listerine, and this was held in place by a four-tailed bandage tied so as to give firm support. Expecting severe suppuration, and perhaps necrosis of the skull, this was intended purely as a temporary dressing.

The patient was then put to bed and a dose of morphia administered. I did not see him until the following morn-

ing. He had passed a comfortable night and had reacted well.

On the third day the dressing was removed from the hand and reapplied. This was done then every few days until recovery. There was no sloughing, except the end of the index finger, and there was little hope at any time of saving this.

No discharge appearing on the arm dressings they were not changed until the fifteenth day, when the wound was found solidly united. The ligatures were removed, and the dressings were changed only twice more.

The dressing was removed from the scalp on the twenty-first day, and the wounds were found firmly united, with the exception of three points, which discharged for some time on account of exuberant granulations. There was no necrosis of the skull, and by the sixth week the whole batch of wounds had healed entirely. There was but little febrile reaction, and this only during the first few days.

CASE OF WEAK ANKLES RESULTING FROM PARALYSIS OF PERONEI MUSCLES, FOLLOWING YELLOW FEVER.

Miss W. came under my charge in March, 1884, suffering from "weak ankles." Upon inquiry I obtained the following history: About eighteen months previously, during an epidemic in Pensacola, Fla, she contracted yellow fever, and upon convalescence was found left with loss of voice from paralysis of the vocal cords, and a weak condition of the ankle joints, causing them to turn out when her weight was placed upon them, and rendering walking impossible.

She was provided with a pair of shoes on the outer side of which were placed steel plates extending as high as the top. With these she could make some degree of progress, but after walking a short distance so much pain was devel-

oped in the joints that she would have to desist. The weight of the body throwing the external malleoli against the unyielding steel increased the trouble and suffering by causing abrasion of the skin. These shoes she had worn for a year and a half, as they afforded her the only means of walking at all. No other treatment had been pursued. Upon examination I found the feet cold, with sluggish circulation, and when freed from any restraint there was a strong tendency to assume the position of talipes varus. They could without difficulty be carried into the normal position by gentle manipulation, but could not be held there by muscular action. Upon "point pressure" over the tendon of the tibialis anticus there was slight contraction, drawing the foot inward to an exaggerated degree. There was no apparent wasting of the peronei, though they were in a state of complete paralysis. Making her stand upon the bare feet, I found she could with great difficulty retain the erect posture, and when pressure was made over the tibialis anticus her equilibrium was immediately destroyed and she caught a chair to prevent falling. The application of a strong faradic current produced no contraction of the peronei, and a galvanic current of twelve cells, from the McIntosh combined battery, produced but little effect. Her general condition showed marked anemia: there was very little appetite, and for some weeks there had been a hacking cough which was quite troublesome. There is tubercular history in the family, her father, a very prominent physician, having died of consumption.

Of course, in the symptoms, etc., of this case there is nothing of especial interest, or striking character, but I have selected it as a typical case, furnishing a text, if I may so express it, by which attention may be called to the simple manner in which such troubles may be treated, and the

readiness with which they respond to treatment properly directed. That such are often neglected, or wrongly treated, can in no manner be doubted. The case now under consideration was seen constantly by physicians of ability, the condition of the ankle was known, and yet the only treatment adopted was one based upon wrong principles, and which only increased the suffering and in no way attacked the cause of the disease. There is an impression always that especial apparatus is required, often costly and cumbersome, and hence the case is permitted to grow constantly worse, until it finally falls into the hands of a specialist, when the probability is that surgical means beyond that of the simple character I am going to detail become absolutely necessary, while in the beginning the trouble could have been relieved with the armamentarium of any country doctor.

There is no principle more clearly demonstrated at the present day than that in the treatment of such deformities, we shall select the simplest apparatus possible, and that which least interferes with the normal motions of the part, while it at the same time approximates the natural position of the joint. In this case, after applying the faradic current through the peronei, I cut a strip of English mole skin adhesive plaster two and a half inches wide and twenty four inches long, and this with two roller bandages made up the complete apparatus. The plaster was applied just as in cases of talipes varus. Beginning upon the instep, it was carried around under the foot and up the outerside of the leg as high as the knee, the foot at the same time being strongly pressed outward. While the foot and plaster were held in this position by an assistant, a smooth roller was applied over the whole up to the knee, the upper end of the plaster being then turned down and the roller brought down over it.

Care should be exercised not to surround the foot entirely, and the mole-skin plaster should be secured, if possible, as it sticks without artificial heat. The dressing being completed, the patient for the first time in months stood steadily upon the feet, and with a pair of ordinary shoes walked well. The bandage was removed each alternate day, and the lower end of the plaster being taken from around the foot, a current of electricity was passed through the peronei muscles. This constituted the local treatment of the case, with the exception of a pair of shoes made with a high counter of stiff leather, extending as high as the malleoli.

The constitutional treatment was such as to build up the general health. She was directed to take a tablespoonful of phosphatic emulsion of cod liver oil* after meals and a teaspoonful of the following before meals:

℞. Strychniæ sulph.....gr. ss
Syr. Hypophos. comp.....ʒ vi
(Fellows.)

M.—Sig. teaspoonful in wineglass cold water before meals.

It will be remembered that this syrup of hypophosphite contains strychnia, and the addition is made to give as much as the patient can bear. No tonic is equal to strychnia in restoring the life of a muscle once paralyzed.

Under this course of treatment the improvement was remarkable. Color returned to the cheeks; the appetite was rapidly restored; the cough disappeared, and the muscles soon began to react strongly to electricity.

In two or three weeks the patient could walk three or four miles during a day, without pain or turning of the

*NOTE—This is a preparation of cod liver oil prepared by Hutchison & Bro., of Atlanta, containing free phosphoric acid, and other elements. I have found it universally well borne by the stomach and being made only in small bulk at a time, by them, is always fresh and free from the disadvantages of age. It has proved in my hands the best form of emulsion I have ever used.

ankle, and now there seems no reason to doubt that there will be a permanent cure. The treatment will of course have to be kept up for some time.

My only apology for describing a case of such simple character at so much length is my desire to draw attention to a much neglected class of cases, which are neglected only because the simplicity of the treatment is not considered. One need have very little knowledge of surgery, and a very limited stock of appliances to save them from much future trouble. Of course, such subjects are dealt with at length in special works devoted to these diseases, but such works are not in the hands of the bulk of the profession.

NOTE—A few weeks after the above report, the adhesive plaster was removed and only the roller bandage applied. This was continued several weeks, and on June 17th, all dressings were removed and the ankles were perfectly restored. There has been no uneasiness or weakness since.

TREATMENT OF HYDROCELE BY INJECTIONS OF CARBOLIC ACID—TWO CASES.

Mr. M., aged 62, was sent to me February, 1884, by Dr. John W. Mitchell, of South Carolina, with hydrocele of the right tunica vaginalis, with the following history: The gradual swelling from no assignable cause commenced three years ago. He consulted a physician who made him wear a truss for some time, and one day while purchasing a truss he was examined by another physician who made a correct diagnosis. Six months before coming under my care it commenced to increase with considerable rapidity, until now it prevents his doing any active work. The hydrocele has never been tapped.

February 7th, I drew off the fluid, amounting to 10 fluid ounces, and immediately threw into the sack through the cannula, by means of a syringe fixed for the purpose, one fluid drachm of pure concentrated carbolic acid (Calvert's).

There was absolutely no pain complained of by the patient. I instructed him to keep quiet during the afternoon, and calling later I found him quietly picking his teeth, having just finished supper. The following morning he called at my office and upon examination I found the sack enlarged to almost the original size. There was some soreness, but no more than was desirable. The next morning, two days after the operation, the patient returned to his home in South Carolina. I have subsequently learned that his recovery is complete.

Mr. B., aged 47, consulted me during February, 1884, giving the following history: There had been a hydrocele of the left tunica vaginalis for several years. Once when it became very painful it was tapped, and from this he gained relief for some months. Subsequently another surgeon inserted his trocar and cannula for some distance but obtained no fluid. Upon examination I found the sack large and much distended, with veins of unusual size covering almost the whole surface.

The patient was an exceedingly timid man regarding physical pain, and I recommended to him the carbolic acid treatment.

February 10th I operated. The candle test revealed the testicle in the front of the tumor, which accounted for the former failure to secure any fluid. I drew off a large goblet brim-full of fluid, and then immediately threw into the sack a fluid drachm of carbolic acid. The pain was most insignificant, even to one so timid, and he was up the following morning (this was done at bed time) and able to go to his duties. There was some inflammation about the wound, as the necessity of making the puncture in the lower portion of the scrotum allowed some of the fluid to leak out. Care should be taken to provide against this by

smearing the scrotum beforehand with vaseline. Twice, owing to the impatience of the patient, I strapped the testicle to hasten absorption, but the cure is now complete.

REPORT ON PRACTICE FOR THE SEVENTH CONGRESSIONAL DISTRICT.

By T. M. HOLMES, M. D., Rome, Ga.

TYPHO-MALARIAL FEVER, OR TYPHOID WITH MALARIAL COMPLICATIONS.

During the summer we were visited by a form of continued fever that presented neither the characteristic symptoms of typhoid nor of malarial fever. Quinine seemed to have no further effect upon it than slightly lowering the temperature, and so soon as the patient was from under its influence would the fever resume its strange type of mingled typhoid and malarial symptoms. The temperature ranged generally from about 103° to 105°, and was characterized, in a slight degree, by the morning remissions and evening exacerbations of typhoid fever, while the pulse was quick and rapid and the skin dry and harsh. The tongue presented an appearance slightly resembling that of the typhoid state, being sometimes of a reddish hue and again pale and dry, but seldom the angry red, glazed or cracked and scaly condition so very typical of typhoid fever. The rose-colored spots, or petechiæ, usually found on the abdominal or dorsal regions in typhoid fever, were absent. The lungs were somewhat congested, and on auscultation gave the moist bronchial rales, not unlike those usually accompanying the typhoid state. The respirations were, in several instances, very frequent and laborious. The cheeks were of a deep roseate hue and the eyes sunken. The whole visage betrayed great anxiety and restlessness.

Delirium and subsultus were rare, notwithstanding the high temperature and headache. Epistaxis was not observed. Percussion over the abdominal region revealed an empty and tympanitic, and yet somewhat contracted, state of the bowels. Headache and restlessness were usual. It was analogous to typhoid in that it was confined to young adults, and its length of duration from three to six weeks. Of course where there was such prolonged high temperature there was necessarily a great deal of disintegration and combustion of tissue, with a corresponding amount of emaciation. The elimination from the kidneys was scanty and high colored, while the bowels were inclined to be relaxed. Anorexia was continuous for even some time after the subsidence of the disease. It was confined chiefly to the rural districts, and in low, flat localities where the wells were very shallow. I denominated it, under the present system of our nomenclature, typho-malarial fever, though I think "typhoid, with malarial complications" would be a denomination really more suggestive of its true symptomatology.

The treatment consisted of quinine at first, with the delusive hope of reducing the temperature and preventing such rapid waste of tissue, while the usual line adopted in typhoid fever constituted the main source of reliance. The results, however, were very unsatisfactory, not only in my own practice, but also in that of other practitioners of the city—the mortality being about thirty per cent.

In one family of my own practice, composed of six members, five were down with it at once, neither of whom were able to hand a drink of water to the other. Two of these died despite all my efforts. 'Tis but just to say, however, that the nursing was very poor. Directions were but partially carried out, and the parents having their own ideas as to what constituted proper treatment, more than

once put them into execution. 'Tis needless to say that their efforts were invariably rewarded with the penalty of the transgressor, the bowels having been several times so much disturbed that the most strenuous efforts were necessary to check them. As a hygienic measure, so soon as the sick were able to be moved I had each family, in every case, to move to a neighboring house, where the water was good and the surroundings much better. In this way a rapid convalescence was, in most instances, secured, and a further extension of the disease did not occur.

MITRAL DISEASE WITH AORTIC STENOSIS.

Lizzie G., colored, aged 30 years; family history bad; mother and a sister died of heart disease; was in Nashville going to school two years ago when she noticed for the first time symptoms of heart trouble. She returned to Rome and assumed the position of cook and housemaid, in a family of the city, where she remained up to her death. The attacks from which she suffered recurred from time to time, and at each one she was compelled to keep her bed for several weeks. They were very prostrating and were accompanied with severe pains in precardial region and with cold feet and hands. I was sent for February 23d, and found her sitting in bed and complaining fearfully. She said the pain at her heart was unbearable and she must have relief. I gave her a small dose of morphia, which relieved her. The next morning I called again and found her comparatively easy. I then gave her a thorough physical examination. Found her pulse very irregular, soft, small and compressible. Auscultation revealed a blowing murmur with each systole of the heart, especially augmented in the third interspace about an inch and a half to the left of the sternum. Percussion showed the heart to be

greatly hypertrophied and the area of dullness to extend to the right of sternum for some distance. The lungs, also, gave forth a dull note, and the rales were mucus-like, showing considerable congestion. The area of hepatic dullness was likewise somewhat increased. The extremities were cold and the entire surface of the body much cooler than the normal. The cause of all these phenomena was evidently to be referred to the heart, and I believed the mitral valves to be the seat of the principal trouble. The patient appreciated the gravity of her condition, for several physicians had pronounced her case beyond medical aid. One had even gone so far, two years ago, as to say she would not live a month. She begged that if anything could be done to relieve her condition to do so, but I could only give her the promise of a future course of treatment after the recovery from her present attack. I left her in the care of a kind mistress who did all in her power for the poor unfortunate's comfort. On March 10th I was again sent for in haste, and, on arriving, found her in a semi-recumbent position, suffering with dyspnœa and expectorating great mouthsful of blood. This hemorrhage had been continuous and very copious throughout the preceding night. It was an effort of nature to relieve her, for the lungs were certainly in a state of great passive congestion on account of the regurgitation of blood at each systole of the heart. All the symptoms were such as to indicate that there was great insufficiency of the mitral valves, but I was unable to discover positively any other trouble of the heart. I thought this sufficient to account for the systolic murmur, the hemorrhage, and the hypertrophied and rapidly beating heart, but could not divine the cause of the very acute, excruciating and continuous pains, with the imperceptible pulse, and yet the rapidly beating and bounding heart, unless

there was some impediment. This was sufficient to arouse my suspicions of of aortic stenosis, the plausibility of which the sequel will show. However, in this opinion I was not sufficiently confirmed to prevent the giving of digitalis, but ordered ʒj. of the infusion to be administered morning and evening with the hope of increasing the volume of the pulse.

I saw her again at ten o'clock, P. M., and found her pulse no better, respirations very frequent, extremities cold, mutterings and groans with every breath, and she answered my questions very unintelligibly. It was evident that she could not hold out long. She died at three o'clock the next morning.

In the afternoon I made an autopsy and found the lungs sound in structure but greatly discolored. The liver was enlarged, and on being punctured with a bistoury, blood came forth freely. In position the heart was transverse to the axis of the body, and the apex between the third and fourth ribs at the upper margin of the left mammary gland. The left ventricle was greatly hypertrophied and extended fully two and one-half inches to the right of the median line of the sternum. Minute deposits on the exterior of the heart showed that there had been more or less pericarditis, and an examination of the inner surface fully confirmed all suspicions as to its condition. The walls or margins of the auriculo-ventricular orifice were in a state of complete calcareous transformation so that the particles of lime were easily crumbled off with the finger nail. This condition of course prevented the valves from performing their natural functions. The aortic orifice was contracted at least one-third and indurated, but not calcified. The various symptoms were now easily accounted for and the utter helplessness of the case made manifest.

A CASE OF PREGNANCY THAT PUZZLED SIX DOCTORS.

E., negress, aged twenty years, well developed, of medium height and stout, family history good, took cold in November, 1882, while engaged as cook at one of the female colleges of the city. When called, January 23d, 1883, I found that she had been vomiting for several days, a very greenish liquid, admixed with more or less blood, but free of solid constituents; was unable to retain anything upon her stomach, and complained of a dull, somewhat severe, and very persistent pain in the stomach and lower part of the bowels. Her lungs, too, were not free from pain, and head ached incessantly. The bowels were constipated, and catamenial flow had not been seen since the alleged cold, in November. She had a hacking and persistent cough and expectorated a bloody sputa, closely resembling the "brick dust" of pneumonia. Her temperature was slightly above the normal, while the pulse was small and thready.

Percussion revealed a general dullness and soreness throughout the lungs, both of which symptoms were exaggerated in the lower lobe of the left. Also, considerable tenderness over the epigastric, abdominal and uterine regions, and an empty and contracted condition of both stomach and bowels. The area of hepatic dullness was also somewhat increased and very tender.

On auscultation, the breathing was rough and sonorous, and incomplete in the area of exaggerated dullness.

The heart-beat, like the pulse, was of an adynamic character. The extremities were cold, and while the patient was extremely calm, her visage betrayed considerable anxiety. She was very taciturn, and was indisposed to answer even my most pointed questions bearing upon her condition, which had a tendency to confirm my suspicions of

pregnancy. This condition, however, she bitterly denied, affirming that she had not laid herself liable to its occurrence. Despite this, my conclusion was that it was either pregnancy or a suppression of the menses, with vicarious menstruation through the lungs, brought on by cold. Either of these conditions, I thought, might produce the symptoms present, and therefore assured the family that time alone would determine.

Day after day passed by, and though the materia medica was exhausted in the endeavor to relieve the pain and general congestion, and to stop the vomiting, which was so distressing, all efforts were unavailing. She was still unable to retain any food whatever, and therefore became very much emaciated. Her bowels would only be moved by frequent enemas of warm saponified water or castor oil. Her kidneys acted but very little, and the urine was high colored, notwithstanding the absence of fever. The uterus did not seem to enlarge, which militated against pregnancy, but I concluded to make a spectral examination, and see if there existed any pathological condition of this organ. I found the os somewhat congested, and enlarged considerably. To this I made an application of iodized phenol with the intent of relieving the congestion and bringing about a healthy condition of things. The uterus did not appear to be an impregnated one. Indeed, it seemed somewhat contracted. My faith in pregnancy was now considerably shaken. I was really near my wit's end, for I did not know what to think. Shortly after this the nurse, who was her sister, told me that she had noticed in the urine long shreds of a mucus-like consistency. She grew gradually worse, and I concluded that a council was needed. So I called in another physician of considerable experience, who diagnosed the case general congestion. He attributed the pains,

headache and vomiting to this condition, and thought the sanguinous sputa to be vicarious menstruation.

At my request he prescribed, and recommended the giving of all food per rectum, but this and several subsequent prescriptions by him were followed with the same ill-fated results of all preceding ones by myself. We seemed to be laboring against hope, and as a matter of novelty more than an expectation of being benefited, called in three other physicians. After a careful examination of the case no two agreed as to what it was. One diagnosed it gastric ulcer or cancer, another cancer of the pancreas, and one thought it might be hepatic abscess, which had gradually insinuated itself through the walls of the stomach, and in that way the bloody sputa might be accounted for. Having thus signally failed, we were worse off so far as a positive diagnosis was concerned than before. It certainly could not be all of these, or at least, we were not prepared to admit that such a *multum in parvo* condition existed. We then appointed a meeting at which were read the latest and most reliable authors bearing upon the case, but no light seemed to be thrown upon it, nor did anyone have sufficient confidence in his diagnosis to advocate or defend it with any degree of enthusiasm.

Still, not being satisfied and feeling no little interest in a case which, according to our manner of seeing, was shrouded in impenetrable darkness, we concluded to submit all the symptoms to the oldest and most experienced active practitioner of the city, and one of quite an enviable reputation as a diagnostitian and general practitioner. After considerable deliberation, he thought it must be either pregnancy or phthisis.

Finally the majority of us concluded we didn't know what it was and frankly confessed our ignorance, thereby

nullifying the oft repeated proverb, "in the multitude of council there is wisdom!"

We had done what we could, and were patiently awaiting the time when we hoped the post mortem knife would make plain the mysterious condition of things; but "time, the tutor of the good and bad," deprived the little instrument of the honor, and revealed the mystery itself. I was sent for in great haste, March 28th, and when I arrived, instead of finding our patient a victim of the unknown disease's deadly ravages, I beheld her liberated from the very jaws of death. It was a fœtus of about three months' growth, with its appendages, that was presented to my admiring gaze. I felt like exclaiming *Eureka*, although I was prepared to receive any revelation that might be made. The patient was resting quietly, and was free from pain. The hemorrhage was slight and almost no untoward symptoms were present.

True, she was very much emaciated, but feeling certain that a very early recovery would follow the abortion, I accordingly apprised the family.

When I made known the final facts in the case to my friends who had been so kind and generous in giving me the benefit of their counsel and wisdom, they smiled in a manner well becoming the learned and dignified sons of Æsculapius. The patient soon regained her former good health and natural proportions, and though, like many of her race, a little tarnished in character, she now enjoys perfect freedom from any physical trouble.

REPORT OF SURGICAL CASES FROM SEVENTH CONGRESSIONAL DISTRICT.

By W. B. WELLS, M. D., Chairman on Section.
Red Clay, Georgia.

Case I.—Excision of mammary gland for scirrhus affection involving the whole gland. The lady was fifty-seven years old, had had a hard tumor of the breast for over one year, which had become excessively painful for the last four months preceding the operation. The skin and soft parts surrounding becoming more or less involved, but not bound down by adhesions to the ribs.

OPERATION.

The patient was chloroformed; the double elliptic incisions were made in the usual way, corresponding to the long axis of tumor, which was nearly parallel to the lower border of the pectoralis major muscle, and involving a portion of it. The incisions were made to circumscribe all tissues involved, which made a section of the skin three inches wide in the middle, narrowing down toward each end, making the incised integument about nine inches long and removing a tumor weighing one and a half pounds.

Dissection was made from below upward until adhesions to the pectoral muscles were reached (about the center of tumor), when it was made from above downward, removing all adherent parts. One ligature only was required, all other vessels yielding to torsion. Closed wound with silver

wire suture, and adhesive strips, water dressing; union by first intention; sutures removed on eighth day; ligature passed on twelfth day; complete union the twenty-second day. The patient expressed herself as feeling better during cicatrization than at any time for four months prior to the operation. One year after the operation the lady expressed her many thanks for the "cure," as she called it. A short time after, however, an ulcer appeared on the heel and an axillary gland began enlarging, and in six or seven months she died of open cancer of the heel and a small tumor of axillary gland, with (in all probability) many internal glands involved. I report this case, as I think it illustrates the importance of an early operation, in tumors of malignant character, or no operation.

Drs. M. P. Haynes, J. C. Kirkpatrick and R. J. Jameson rendered valuable assistance.

Case 2.—Miss S., age 44 years, in some respects similar to first case, scirrhus affection of mamma; had existed about two years; had hereditary taint; softening had commenced. Results of an operation had been fully explained in this (as should have been stated in the first case). After mature deliberation, she made up her mind for the operation, which was performed as in the first case. Everything hopeful for the first ten months, at which time an enlargement in the right side showed itself. Scirrhus of the liver was my diagnosis; died in fifteen months after the operation. No post mortem was allowed.

Drs. M. P. Haynes, T. H. Roddy, Watkins and R. J. Jameson (then a student) rendered valuable assistance.

Case 3.—Mr. C. received an incised wound of the hand from a fellow-laborer by accident, by the falling of an ax, which passed entirely through his hand, severing metacarpal bone of the middle finger just posterior to metacarpo-

phalangeal articulation and metacarpal bone of ring finger just in front of carpo-metacarpal articulation, and disarticulating the metacarpal bone of little finger from carpus and severing the palmer arch. I saw the case twenty-six days after the accident. The history I received of the case was that he had had excessive hemorrhages, as his anemic appearance indicated.

I found the hand and arm much swollen; soft tissues of middle and ring fingers sloughing from the bones, though a granulating surface on carpal side of incision. First impression on my mind was that the whole hand would have to be sacrificed, but upon a more careful examination I found that I could dissect a flap from external lateral, and part of the anterior and posterior aspects of the little finger, by which (by spreading it out) I could cover the stump of the hand after removing the entire meatcarpal bones of the little and ring fingers, and all anterior to them, with the anterior half of the meatcarpal bone of middle finger, making a diagonal stump of the hand extending from carpo-metacarpal articulation of little finger to the anterior part of the web between index and middle fingers, which was done, and flap made from little finger stitched in situ with a palmer and dorsal line of sutures, adhesive strips and carbolic dressing. About two-thirds of the flap healed by first intention, the remainder by granulations. The unfortunate man recovered with index finger and thumb, after having been the subject for twenty-six days of two irregulars. Inflammatory action had run so high in carpus as to produce bony anchylosis of that joint.

Case 4.—Mr. K. received an injury of the seventh rib by the end of a rail being projected against him by accident. He complained of much pain at the time, but continued to look after his farming interest. Finally he commenced

coughing; was thought by his friends and doctor to have consumption; he had a swelling in the region of the original injury, which finally opened externally; his doctor thought he had an abscess of the lung opening externally; he had despaired of recovery.

I was called to see him in March, 1883; found the rib carious for two or three inches, with a large callus pressing on anterior portion of left lung; had considerable mental trouble (partial mania), resulting from pressure and irritation to lung and heart, producing occasional intermittent action; operation for the removal of all the diseased osseous matter. The dead bone was removed by making a section near each end of callus with trephine and excavating with gouge. Some three months later was called in to see the case; found that the disease had involved at least four inches more of the rib; mental trouble worse—amounting to a religious insanity; the patient was in every way worse; lost vitality, etc.

The friends and relatives decided on a second operation, which was performed; made section of rib near each end of callus; removed all intermediate bone; cleared the callus of all suppurating bone; packed cavity and treated it with carbolized lint; healed the opening from the bottom or callus by the granulating process, (leaving flaps open) healed in three months, leaving a healthy cicatrix; considerable depression in the side as the callus did not adapt itself to the arch of the rib as it originally stood; cough ceased, heart regained its normal functions, mental aberration ceased, and, in fact, the man looks well and is well. This case is reported, as it shows the result of both reflex nervous and mechanical irritation.

ANTISEPSIS IN OVARIOTOMY AND BATTEY'S OPERATION—THIRTY CONSECUTIVE CASES—ALL SUCCESSFUL.

By ROBT. BATTEY, M. D., Rome, Ga.

In the Virginia *Medical Monthly* for August, 1883, the writer reported eighteen consecutive cases of ovariotomy and Battey's operation, done with antiseptic precautions, without a death. The number of these operations has now reached thirty, and it is proposed to continue the brief notes heretofore given. The term successful is used with reference only to the question of mortality attending the operations and not to the final results as to perfect restoration of the health. Time is required to develop the latter, and it is proposed hereafter to consider the two classes of cases separately as to these particulars. Cases of ovariotomy and of Battey's operation are here classed together because the influence of the antiseptic precautions taken in determining the relative mortality are alike in both.

CASE 19—BATTEY'S OPERATION.

Married; aged 29; no children; no miscarriages; history of membranous dysmenorrhœa from her first menstruation. Examined in 1878, she had endometritis, retroflexion, right ovary very sensitive.

In 1880 she consulted Dr. Emmet in New York, who found pelvic cellulitis upon the right side, and advised Churchill's Tincture, which did not benefit her. Subsequently the os was dilated and she was worse; a pessary was fitted, remained a few days and did harm. Entered my infirmary in July, 1883. The uterus still retroflexed and tender, the right ovary is very sensitive and the seat of

daily pain, the left is prolapsed and tender to the touch. She requires daily doses of hypodermic morphia which is rapidly enslaving her. Both ovaries and the right fallopian tube were removed, Drs. Holmes, Goodrich, H. H. Battey and West assisting. Ether, anæsthesia and carbolic solutions and spray were employed. The ovaries were both adherent by plastic lymph; the left prolapsed, tunic much thickened and corrugated, contained a ruptured follicle of ten or twelve days. The right ovary contained a cyst as large as a hickory nut which encroached greatly upon the stroma of the gland. The right tube was inflamed and much enlarged. She went on fairly well, though not the best. The maximum pulse 114 was in the evening of the first day. The maximum temperature 102.5 occurred on the evening of the fifth day, when the left parotid gland became much swollen and painful, suggesting the inquiry is this metastasis? She had a short attack of the same side a year ago while suffering with the right ovary. The pelvic condition was excellent and gave no trouble. She sat up as usual on the fifteenth day and returned home on the thirty-third day.

CASE 20—BATTEY'S OPERATION.

Married; aged 36; two children; youngest 13. She dates her ill health from last labor; complains of pain and tenderness in the right ovarian region; sympathetic nausea every morning, cannot take breakfast. Each monthly period is like a labor in suffering and she gets up in a weakened state. She cannot walk nor stand for any time without great pain in the right side, and each year she grows worse. Ten years ago Dr. Sims incised the cervix for her, but without relief. She entered my infirmary in July last and I found a slight endocervicitis with great

tenderness of the ovaries, especially marked in the right. She says she has had many physicians and much uterine treatment but without benefit; it only makes her worse; she prays for relief. Operated with the assistance of Drs. Holmes and West and Mrs. Battey. There were two inches of subcutaneous fat. The right ovary was cystic and the tube contained a hard, expanded nodule in its course; the left was under size, the tunic thickened, corrugated and blanched. There was no recently ruptured follicle in either ovary. Both ovaries and the right tube were removed. The convalescence was uninterrupted, the maximum pulse reaching 110 and temperature 101.2. She sat up on the fifteenth day and returned home on the thirtieth.

CASE 21—BATTEY'S OPERATION.

Single; aged 27. In 1877 she attended a dancing party, was caught in rain, got very wet, arrested the menses, and she has had ovarian dysmenorrhœa ever since. She has suffered great and frequent recurrence of pain, and has contracted the opium habit, one grain being her average dose of morphia. She is quite hysterical and has had repeated attacks of hystero-epilepsy. She has been much treated, both locally and constitutionally, but to no purpose. The uterus is small but apparently healthy and not displaced. Both ovaries are quite tender, the left exceedingly so, and the seat likewise of great pain.

The operation was done in my infirmary August 23d, 1883—Drs. Holmes, H. H. Battey, West and Wall and Mrs. Battey were present. The ovaries were both bound down by adhesions and gave some trouble in removal. The right ovary was normal in size with thickened tunic; the left was enlarged and contained a small cyst filled with a very dark, thin liquid. The pulse repeatedly flagged during the operation, and respiration at times suspended, requiring

hypodermic brandy and artificial respiration. She rallied well, however, when put to bed and the pulse became round and full. There was pelvic pain and she had by enema 300 drops elixir opium during the afternoon. On the fourth and fifth days the pulse reached 120, and the temperature 102.5. Upon the fourteenth day she was sitting up in a chair and returned home on the twenty-ninth. During the fall months she gained forty pounds in flesh.

CASE 22—SINGLE OVARIOTOMY.

Single; aged 22; general health good. Seven years ago she observed her abdomen enlarging; went to Albany, N.Y.; was treated a year by electricity without benefit. She was afterwards tapped and a gallon of clear liquid obtained. She has been tapped six times since; after tapping, the tumor disappears and the abdominal wall drops back upon the spinal column. She has no pain and the menses are regular. The abdomen is moderately distended, wave of fluctuation very distinct all over the abdomen. Hymen intact, uterus virginal pressed a little back into the hollow of the sacrum. The wave of fluctuation is distinct in the anterior fornix of the vagina. She has good color, good appetite, tongue little coated, bowels normal.

On the 6th of September, 1883, the tumor was removed in my infirmary, Drs. H. H. Battey, Lovelace, West, and Wall present. The operation lasted barely thirty minutes and yet the shock was great, and the pulse much depressed, requiring the head to be lowered and brandy hypodermics. The cyst weighed 14 pounds, was bilocular, had the ovary and tube spread out upon its wall, and contained a clear liquid of S. G. 1008, free of albumen—therefore, a parovarian cyst. The convalescence was somewhat retarded by difficulty in properly evacuating the bowels. On the eigh-

teenth day a small abscess showed itself in the abdominal wall which discharged in a few days. She returned home well on the 27th of October.

CASE 23—BATTEY'S OPERATION.

Married; aged 34; three childreen, last 13 years ago; no miscarriages. Her health has been bad since her last labor; for some years she has suffered at her periods ovarian pain, which has steadily increased, until now she is scarcely free of it at any time. The menses recur every two to three weeks and last four to five days, with much agonizing pain, vomiting and some fever at each recurrence. She spends most of her time in bed and requires much morphia to render her miserable existence at all tolerable.

This case was sent to my infirmary from Cass county, Texas, and admitted 27th of August, 1883. On the 28th she was examined, the uterus found to be in fair condition, but the ovaries, the right especially, were extremely tender. The examination was followed by great soreness and much pain. On the night of the 30th she had a very hard chill, comparable to a severe urethral chill; the pulse ran up to 150 and the temperature to 106.5 degrees. There was great pain in the right ovarian region and much morphia was required. She was well impressed with quinine.

Having rallied somewhat from this attack, the operation was done September 10th; present Drs. J. B. S. Holmes, H. H. Battey, and West, medical student Glover, and Mrs. Battey. The operation was done under ether and with my usual antiseptic appliances. The peritoneum was much thickened and very vascular. The ovaries were free of adhesions, both of them enlarged and cystic; the tunic thickened and corrugated. She bore the operation well and was put to bed in good condition. She had no trouble

whatever; the pulse did not exceed 88, nor the temperature 100; she sat up on the eleventh day and returned home on the twenty-third.

CASE 24—BATTEY'S OPERATION.

Married; aged 36; one child five years old, and bad health ever since. She complains of pain in the region of the left ovary; menses every three weeks. Her brother, an intelligent physician, writes me that for two years she has been threatened at her periods with convulsions. Three months ago it culminated in hystero-epilepsy, and she had forty convulsions during the menstrual period These convulsions have recurred at each period since but were partially controlled at the last one by the combined use of bromides, chloral and chloroform. Her general health is much broken down.

She was admitted to my infirmary 21st of September. I found the right ovary enlarged to the size of a hen's egg. The left ovary could not be mapped out well on account of the extreme tenderness. The uterus was healthy.

The operation was done September 23d—Dr. Little of Alabama, Dr. Keown of Ellijay, Georgia, Drs. H. H. Battey and West, Glover medical student, and Mrs. Battey were present. Both ovaries were removed. They were somewhat adherent by lymph, the left especially. The right was completely degenerated into a number of hæmatic cysts; the left much shrunken, indurated and corrugated, scarcely more than one-fourth normal size, showed recent ovulation with blood clot at point of rupture. She was put to bed in good condition, but with very slow pulse and cool extremities; required no opiate, as there was no pain. At 8 p. m. the pulse was but 56; temperature 98. On the second day the morning and evening pulse was 54, and temperature

98.6 and 99.5 respectively. On the fourth day the pulse went to 100 and temperature 100.8, from which it quickly dropped to a normal standard and remained so. She sat up on the twelfth day and returned home on the 21st. The restoration to health was immediate and gratifying, the menses and convulsions have not returned.

CASE 25—BATTEY'S OPERATION.

Married; aged 28; one child four years old; confirmed dyspeptic; menses irregular and painful; pains constant in back and pelvis; walking breaks her down, and she suffers much for want of exercise; dyspnœa. She had been told that her sufferings were due to lacerated cervix; Emmet's operation was done for her two years ago at Battle Creek, Michigan, but gave no relief to her symptoms. She was admitted to my infirmary October 1st. There was slight cervical endometritis; the left ovary was prolapsed into the pouch of Douglas, fixed by adhesion, and very tender to the touch; the right enlarged but not so sensitive to pressure.

Operation October 2d; present Surgeon H. P. Harvey, U. S. N., Drs. J. B. S. Holmes, H. H. Battey, West, Glover, and Mrs. Battey. Both ovaries removed antiseptically; the right was cystic, half size of hen's egg; free of adhesion excepting to the fallopian tube, which was quite firm, and the tube was removed also. The left ovary was prolapsed and adherent, enlarged; tunic thickened and corrugated; two ruptured follicles.

In the manipulation the ligature slipped from the right pedicle and moderate hemorrhage occurred; a deeper placed ligature quickly controlled it. The pulse became very feeble, requiring hypodermics of ether and lowering of the head. She rallied well, however, when put to bed; there was a little vomiting but the nausea, which was greatly feared,

lasted but a few hours. On the third day the maximum of pulse (110) and temperature (100.8) were reached. The convalescence was speedy and excellent.

CASE 26—BATTEY'S OPERATION.

Married; aged 33; three children, one surviving, 11 years old; three abortions; bad health since last child, eight years ago. She came to my infirmary September 26th, with a history of uterine and ovarian troubles dating back eight years to her widowhood For this she was treated and so far relieved that she contracted a second marriage, when her old troubles seemed to explode again in an aggravated form. She had also enlarged spleen, enlarged and indurated liver, and frequent diarrhœa. She was a complete wreck, so much so that I doubted whether the operation would restore her health, and doubted her ability to undergo successfully the ordeal.

I stated these doubts to the patient and her husband, and frankly advised them to return home and trust to such palliative measures as medicine might afford. After a day's consideration the parties both expressed their extreme unwillingness to return home without the small hope which the contemplation of the operation had inspired, and urged me to go on with it as a *dernier resort*. Feeling, myself, that it was all which looked hopeful, it seemed a duty to go on with it.

The operation was therefore done on the 8th of October, a little time being allowed to improve her condition. Drs. H. H. Battey, West, Glover and Whitesides and Mrs. Battey were present.

On opening the abdomen a half pint of ascitic liquid escaped; both ovaries and the left fallopian tube were removed. The right ovary was cystic, the tunic thickened

and corrugated; contained a recently ruptured follicle. The left was of double size, somewhat adherent to the surrounding structures, firmly so to the fallopian tube which was taken away with it. She bore the operation unexpectedly well and was put to bed in good condition with full round pulse. The bowels were somewhat troublesome with a tendency to run off, but the stomach behaved better than we could have hoped for. The convalescence disappointed our fears for her; she did admirably well. The maximum pulse was 100 and temperature 100.2. She returned home on the twenty-sixth day and her restoration to health and strength was marvellously rapid and complete under the existing conditions.

CASE 27—BATTEY'S OPERATION.

Single; aged 36; interstitial uterine fibroid; thinks it started from a blow received six years ago. For four years she has had a troublesome and increasing menorrhagia, which has caused, at times, much debility. She was admitted to my infirmary and examined on the 16th November. The uterus was enlarged, reaching nearly to the umbilicus, with two or three knobby outgrowths; sound entered the cavity six inches. The ovaries could not be reached so as to define them at all.

The operation was done November 29th; present, Drs. H. H. Battey, West, Glover and Mrs. Battey. With my usual antiseptic precautions and ether anesthesia, I removed the left ovary, which was full of cysts and as large as a walnut. Diligent search failed to find the right ovary or tube; they seemed to be lost in the substance of the tumor. The convalescence was excellent, so far as the operation is concerned, neither pulse nor temperature exceeded 100, but she was long troubled with rheumatism, to which she was

often subject, and remained in the infirmary during my winter vacation, up to the last of January. After her return home the menses recurred with considerable loss of blood.

CASE 28—SINGLE OVARIOTOMY.

Single; aged 20. The family physician says he was called to her in October, 1883. Up to June she had enjoyed good health and the menses had been regular, but the last time very scanty. He treated the case as bilious colic with prompt relief. He was again called, within a few days, for a similar attack, with like relief; but at this visit he discovered an enlargement in the lower abdomen, rounded above, reaching half way to the umbilicus, and distinct fluctuation. The tumor disappeared on the 30th October. In November the menses failed altogether and have not since appeared. On the 25th November she had recurrence of the pain with nausea, vomiting, gastritis. The tumor had returned and reached the umbilicus. Examined per vaginum; os high up on left side, rather too patulous; uterus appeared to lie transversely in the pelvis. After three days the tumor had again disappeared but free liquid was discovered in the peritoneum, and in a week more was entirely absorbed. On the 20th December the tumor reappeared rather suddenly with pain, vomiting and constitutional disturbance as previously. It now reached nearly to the ensiform cartilage. It remained a week, suddenly disappeared with fluid diffused throughout the abdomen, which in another week was gone. A precisely similar attack commenced the 20th January and ran a similar course. There was no menses. During all these months she had constant nausea and much vomiting, scarcely able to retain a single meal.

She entered my infirmary on the 11th February extremely emaciated, having lost more than forty pounds since the previous July. Examination conducted with much care to prevent rupture of the cyst. The tumor is ovarian, reaches now above the umbilicus and fluctuates freely. The abdomen is quite tender; pulse and temperature elevated; much nausea and daily vomiting. Steps were taken to quiet the stomach and rally the strength preparatory to operation. On the 28th, however, another of her severe attacks was strongly threatened, and being worse the following day, it was deemed best to operate at once before the abdomen was again deluged with the cystic liquid. The operation was done on the first of March, assisted by Drs. J. B. S. Holmes, H. H. Battey, West, Glover and Mrs. Battey, and the usual antiseptic precautions used. The following letter to her physician describes the case: "For two or three days there has been reason to suspect with Miss —— another rupture of the cyst. She had nausea, fever and increasing abdominal pain and distension. To-day I cut into the abdomen and found the tumor already surrounded by a quantity of thick, bloody liquid, with much dark granular matter diffused through it, which had escaped by rupture into the abdominal cavity. It was terrible looking stuff and could not have been disposed of by any possible absorption. She surely could not have carried it two weeks. The peritoneum, both parietal and visceral, was roughened by granular inflammation. The tumor was a multilocular cyst of the right ovary; the left ovary healthy; the cyst contents quite variable; one large pocket discharged a dark, smoky, thick liquid; others contained thick, transparent jelly; others a dense caseous material like cheese curd. There was also a sack of yellow pus.

"Long standing inflammation of the cyst-wall had ren-

dered it as rotten as wet wrapping paper, so that it gave way in all directions and much of its varied contents escaped into the abdominal cavity in spite of all I could do, bathing the viscera in it everywhere, and I had to scoop several pints of the horrid stuff out of the pelvic cavity with my hands. The tumor was extensively adherent to the omentum but not elsewhere.

"The shock of the operation was great and the pulse very feeble in spite of many hypodermics of brandy. I cleaned out the abdomen and pelvis as well as I could without too much prolonging the shock, but not so thoroughly as I would have liked to do, and lodged a drainage tube reaching well down into the pelvis. She was put to bed in an hour and rested well; at 6 P. M. the pulse was 112 with fair volume, and temperature 99.5. The ordeal is a trying one for her and I cannot say what she will do; I may say, however, I have seen one apparently more unpromising case do perfectly well and go on to speedy recovery."

The convalescence has been slow. The maximum pulse, 120, was reached on the second and third days, the temperature going to 101.8. Malarial paroxysms on the 11th, 23d and 25th days carried the pulse to 112 and temperature over 103—but these were promptly controlled by quinine. She was moved into convalescent quarters on the 17th day, and is slowly regaining strength and flesh. Returned home on the 21st April—able to travel alone.

CASE 29.—BATTEY'S OPERATION.

Married; aged 40; five children, youngest aged 8; bad health since last confinement; complained of uterine troubles, became hysterical and it was noted that the mind was slightly impaired, though this was scarcely noticeable to strangers. For three years past she has had, about once

a year, an attack of hystero epilepsy. A year ago she had chorea, after which the mind gave way rapidly. Consulted Dr. Hammond, in New York, and was thoroughly bromidized. The chorea yielded and there have been no subsequent convulsions, but the mental disorder has slowly increased. She entered my infirmary March 29th quite insane but with no suicidal or destructive manifestations. There is slight endocervicitis; no uterine displacement; the ovaries are very sensitive to pressure, especially the right. The menses are tolerably regular, but accompanied by much nervous excitement and increased mental disturbance.

Operation April 3d, with usual antiseptics; present, Drs. H. H. Battey, West, Hammond and Glover, and Mrs. Battey. The ovaries were free and both removed and wound closed within fifteen minutes. The tubes were healthy and not disturbed. The left ovary was much atrophied, tunic thickened and corrugated, no sign of ovulation. The right was enlarged to double the natural size contained three cysts, tunic thickened and corrugated like the left; contained a recently ruptured follicle. There was no shock; put to bed in good condition; stomach behaved well; slept quietly and did not require any anodyne until 11 P. M, when a sixth grain morphia carried her comfortably through the night. On the second and third days the pulse ranged between 70 and 76; the temperature from 99.7 to 100; morphia repuired only at night; the mental state is markedly better. She has gone rapidly on to convalescence with pulse at no time above 76 and temperature near the normal.

On the fifteenth day she sat up in a rocker; was able to ride out in carriage on the twenty-second day, and returned home by rail the twenty-fourth day, the mind markedly improved and her family very hopeful of her entire restoration. How well founded this hope may be the lapse of time alone can show.

CASE 30—SINGLE OVARIOTOMY.

Married; aged 50; barren; passed change of life three years ago. She first observed, twenty years ago, a small, hard lump the size of a walnut in the region of left ovary, which enlarged very slowly until eight years since, when she had a severe attack of, so-called. pelvic peritonitis and was very ill; after which the enlargement became more rapid. Her general health has remained comparatively good, and she only complains of the mechanical pressure.

She entered my infirmary from her home in Arkansas, and was examined on the 13th April, 1884. She has a fair amount of flesh; abdominal walls are 1¾ inches in thickness; tongue clean; appetite good; bowels constipated. The abdomen projects forward like a normal pregnancy; percussion dull, excepting above and in either flank where the colon is tympanitic. Between the pubis and umbilicus lies a very hard mass which projects a little forward from the general outline of the tumor. Behind, around and above this is a cyst which extends from flank to flank upward to the ensiform cartilage, and fluctuates throughout. Is it fluctuation, or only elasticity? Per vaginam the tumor is soft and fluctuating; lies in front of the uterus, which is pressed far back into the hollow of the sacrum; sound enters the uterine cavity two and a half inches; think the uterus moves separately from the tumor, though cannot determine this positively; tumor movable; probably no adhesions; diagnosis, ovarian cyst; no menses for two years; observe the pulse to be fifty-two, but auscultation shows no heart disease; her normal pulse is sixty.

Operation, 19th April. Present, Drs. H. H. Battey, Lovelace and West, Mr. Glover, medical student, and Mrs. Battey. Ether and carbolic spray, and solutions used as usual.

The tumor consisted of one large cyst, from which was drawn three gallons of light colored, opaque, pea-soup liquid. There was a smooth, hard, semi-cartilaginous mass, three by four inches, projecting from the anterior wall of the sac. There were no parietal adhesions, but many in the pelvis and one to intestine. These were separated with comparative ease and without troublesome hemorrhage; pedicle short and broad, springing from right side, ligated in two portions. The cyst walls were thick and strong, and the contents cleanly emptied without abdominal contamination. A pint of dark colored serum was removed from the abdominal cavity; left ovary healthy and not disturbed; put to bed in good condition with little or no shock.

She did not require any anodyne, or medicine of any kind. The pulse ranged from fifty to seventy, and the maximum temperature was one hundred and one upon the third day. On the fourth day one half of the deep sutures were removed, and the remainder on the sixth day, the wound being well healed. On the twelfth day she sat up in bed; was out in a chair on the fourteenth, and upon the thirtieth she returned to her home in Arkansas quite restored.

SYPHILIS AS A SOCIOLOGICAL PROBLEM—THE OPINIONS AND STATEMENTS OF HERBERT SPENCER REVIEWED.

By EUGENE FOSTER. M. D., Augusta, Ga.

"To speculate upon an opinion is an act of the most egregious and unpardonable folly. To be dogmatic and self-assertive without due reason is illogical and unjustifiable. Yet this tendency does exist even in the minds of the profoundest thinkers and philosophers, and sometimes proves the greatest obstacle to the spread of truth, and the most fruitful source of error."

This language is especially applicable to Herbert Spencer, one of the profoundest thinkers and greatest philosophers in the world, when he discusses the subject of Syphilis as it appears in his work on "The Study of Sociology."

The following quotations show some of the objectionable statements:

"All who are acquainted with such matters know that up to some ten years since, it was habitually asserted by lecturers when addressing students, and by writers in medical journals, that in our day, syphilis is a far less serious evil than it was in days gone by. Until quite recently this was a common-place statement, called in question by no one in the profession. But just as, while a decrease of drunkenness has been going on, temperance fanatics have raised an increasing outcry for strenuous measures to put down drunkenness; so, while venereal disease has been dimin-

ishing in frequency and severity, certain instrumentalities and agencies have created a belief that rigorous measures are required to check its progress."

After offering the opinions of a few surgeons in support of his views, Spencer says:

"Yet, notwithstanding this testimony, great in quantity and much of it of the highest quality, it has been possible so to present the evidence as to produce in the public mind, and in the Legislature, the impression that peremptory measures for dealing with a spreading pest are indispensable. As lately writes a member of Parliament: 'We were assured on what appeared unexceptionable testimony, that a terrible constutional disease was undermining the health and vigor of the Nation, and especially destroying innocent women and children.'" Again Spencer says:

"And then note the startling circumstance that while so erroneous a conception of the facts may be spread abroad, there may, by the consequent alarm, be produced a blindness to facts of the most unquestionable kind established by the ever accumulating experiences of successive generations. * * * * Yet now, in the state of groundless fright that has been got up, the concern hitherto exhibited by the Legislature for the personal liberty of the meanest citizen has been needlessly and recklessly lost sight of, * * * * * * and all because of a manufactured panic about a decreasing disease, which kills not one-fifteenth of the number killed by scarlet fever, and which takes ten years to destroy as many as diarrhœa destroys in one year."

"And the latest authority on syphilis, Lancereaux, whose work is so highly valued that it has been translated by the Sydenham Society, asserts that:

"In these cases, which are far from being rare, syphilis is but an abortive disease; slight and benignant, it does not

leave behind any troublesome trace of its passage. It is impossible to lay too much stress upon this point. At the present day especially, when syphilis still inspires exaggerated fears, it should be known that this disease becomes dissipated completely in a great number of cases after the cessation of the cutaneous eruptions, and perhaps sometimes even with the primary lesion."

In order to join issue with Spencer I deny substantially every proposition which he has enunciated on this subject I aver:

1st. That there has been no continued decrease of syphilis, in extent of prevalence or severity of constitutional manifestations, from the first recognized history of the disease to the present date.

2d. Syphilis is propagated by contagion, and that to eradicate the disease from a country all contagion must be destroyed and fresh importations thereof prevented, and that 'peremptory measures for dealing with a (this) spreading pest are indispensable.'

3d. Syphilis is a terrible constitutional disease, of widespread prevalence, threatening to undermine the health and vigor of nations, and seriously impairing the health and strength of the national defense.

4th. Innocent women and children are destroyed by syphilis.

Let us now review these propositions seriatim.

To an intelligent consideration of the first proposition it is proper to take as an illustrative instance an epidemic of syphilis noted for its widespread prevalence and severe constitutional infection. As such a one I cite the Italian Epidemic of Syphilis in the year 1495. I need not remind the student that the intelligent history of syphilis begins with this epidemic—an epidemic characterized by unwonted

virulence, and scattering consternation and alarm among the people where it appeared. What can we learn of this epidemic? To elucidate the question under consideration I shall rely almost exclusively upon Mr. Spencer's authority, Lancereaux. On page 24, vol. 1, Lancereaux says: "Sabellicus relates that a new kind of disease began to spread throughout Italy about the time of the first invasion of the French, *i. e.*, in 1495; and on this account probably it was called the *French disease*. After great sufferings, the body became infested with pustules, which degenerated into malignant ulcers, and disfigured it excessively. Few died of it, considering how many were infected, but still fewer were entirely cured; and not only Italy was subjected to this scourge, but also Germany, Dalmatia, and all parts of Macedonia and Greece. *Almost a twentieth of the whole population suffered from this disease.*"

While quoting Mr. Spencer's authority, Lancereaux, let him tell us the symptoms of syphilis in the year 1495. Lancereaux says:

"The picture furnished us by Fracastor is worthy of reproduction; it affords us an exact knowledge of the syphilis of that period. * * * Those affected were sad, weary and cast down; they were pale; most of them had sores on the genital organs, ulcers similar to those which are wont to develop themselves on those organs after coition, and which are called caries, but of a very different nature; they were obstinate. When they were cured in one place, they appeared in another, and the treatment had to be recommenced. Afterwards pustules arose on the skin, covered with a crust; in some they appeared upon the head, which was the most frequent place; in others they appeared elsewhere. At first they were small; afterwards they increased to the size of an acorn, which they resembled in

shape, their appearance otherwise being similar to the crusta lactea of children. In some cases these pustules were small and dry; in others they were large and moist; in some livid; in others whitish and rather pale; in others hard and reddish. They always broke in a few days, and constantly discharged an incredible quantity of stinking matter as soon as open; they were so many true phagedenic ulcers, which destroyed not only flesh, but even the bones. Those attacked in the upper parts of the body suffered from malignant affections, which ate away sometimes the larynx, sometimes the tonsils; some lost the lips, others the nose, others all the genital organs. Many had gummy tumors on the limbs, which disfigured them, and were often the size of an egg, or of a small loaf; when they broke, a kind of white mucilaginous fluid flowed from them. They attacked chiefly the arms and legs; sometimes they remained callous until death.

"But as if this were not sufficient, there ensued, moreover, severe pains in the limbs, often at the same time with the pustules; sometimes before, sometimes after them. These pains, which were persistent and unbearable, were chiefly felt in the night, and were seated in the limbs themselves, and in the nerves rather than in the joints; some, however, had pustules without the pains, others pains without the pustules; most had both pustules and pains. However, all the limbs were in a languid condition; the patients were wan and emaciated, without appetite, sleepless, always melancholy and ill-humored, and anxious to remain in bed. Their faces and legs swelled, and a slow fever sometimes supervened, but rarely. Some suffered pains in the head, which were persistent, and did not yield to any remedy. If blood was drawn, it was found to be pure, and somewhat mucous; the urine was thick and red; by this sign

alone, supervening in the absence of fever, the disease might be recognized; the stools were liquid and mucous.

"Such were the symptoms of the disease at its commencement; but I speak of a past time, for now, although the disease is still prevalent, it nevertheless appears to differ from what it was then. We have seen, during about the last twenty years, fewer pustules and more gummy tumors, which is the reverse of what was observed in the first years. The pustules, when any appear, are drier, and the pains, when any supervene, more severe. Within about six years the disease has again changed notably; we now see pustules in but very few patients; scarcely any pains, or much slighter ones, but many gummy tumors.

"A circumstance which has astonished everybody is the falling off of the hair of the head and other parts of the body, which produces a ridiculous appearance; some have no beard, some no eyebrows. some are bald. At first these results were attributed to the remedies, especially to mercury. Now it is still more: in many the teeth become loose, and in many they even fall out."

Lancereaux adds: "Such is the picture, somewhat too darkly colored, perhaps, which Fracastor has left us of this famous epidemic, which had already, when that author wrote, lost much of its intensity. Like Fracastor, Guichardin and Ulrich de Hutten acknowledged the mitigation of the venereal disease, and it would even appear from their account that it did not retain its pestilential character for more than seven years."

Baumler, commenting on this epidemic, says: "But at the end of the fifteenth century, various circumstances combined to favor a great general epidemic outbreak. The previous centuries, by means of the crusades and the peculiar pilgrimages of the fourteenth century, had already set the

people in motion, and established more intimate relations between the different nations. The unsettled mode of life had tended to deprave the morals, and the rough bands of soldiers roving through the country gave occasion to all kinds of licentiousness. In Italy, just before the outbreak of the morbus gallicus, an epidemic disease, probably of typhous character, had been raging and destroyed many people, the affection having been imported with the Jews (Marranen),* who were driven out of Spain; besides, the years 1494-5 were marked by great rainfalls, so that floods occurred at Rome and other places. All these circumstances, added to the pernicious meteorological and hygienic influences that always accompany war and siege, would naturally impart to the already existing disease an acuter, severer character than it had before; just as we now observe worse forms of the disease in persons reduced in health, or living under unfavorable hygienic conditions."

"The campaign of Charles VIII. also contributed largely to the spread of the disease in Italy, Spain, France and Germany. This spread, during the last ten years of the fifteenth century, was extremely rapid and general."

Thus, gentlemen, we have presented to us, from three historians of the disease, minute accounts of this, the most frightful epidemic of syphilis to be found within the records of syphilography prior to the nineteenth century. Let us take the nineteenth century and compare some of its epidemics of syphilis with those of the fifteenth century. Sabellicus tells us that *one-twentieth* of the population suffered from syphilis in the fifteenth century, and Jo Nauclerus says "but few of the people died of morbus gallicus."

Lancereaux says of the epidemic of the fifteenth century,

* "These unhappy fugitives were also made responsible for the dissemination of syphilis. Compare Hirsch., Jo. Nauclerus, a cotemporary, states in regard to the pest that broke out with the arrival of the Jews in Italy, that it destroyed many people, the morbus gallicus but few."

"it did not retain its pestilential character more than seven years."

Baumler says of it: "Even during the second decennium of the sixteenth century the course of the disease had become much less severe, other symptoms than those seen at first gradually became prominent, and by the middle of the sixteenth century we find various physicians (Hieronymus, Fracastorius and Anton Musa Brassavolus among others) expressing the opinion that the disease would continue to grow milder and finally become extinct. To be sure this hope has not yet been realized, but the fact of there having been indications which appeared to justify it then, leave us to conclude that the disease, in the first half of the sixteenth century, manifested much the same forms and course as at the present day."

To demonstrate the wide spread prevalence of syphilis in the nineteenth century, the following is presented:

Lancereaux tells us: "Syphilis, as we may conclude from what has already been said, still runs a course differing but little from that of the fifteenth century, in certain countries of the North of Europe, and especially on the coasts of the Baltic and of the German Ocean, in Jutland, Ditmarsch, Schleswig Holstein, on the coast of Sweden, and in certain villages of Scotland, Hesse, and East Prussia. Lancereaux's Treatise on Syphilis, vol. 1, page 45.

On page 46, vol. 1, Lancereaux says:

"In Russia, on the contrary, and particularly in the northern portions of it, amongst the Samoyedes, the Ostjacks, in the south of Siberia, Kamschatka, the Baltic Provinces, Finland, and especially Courland, syphilis generally assumes a severe and malignant form. It also presents itself with the same characters in several other localities of Russia in Europe and Russia in Asia. The Kirghiz (Neftel

Beobachtungen aus den Kirgisensteppen, Wurzburg, Med. Zeitschrift, t. i. p. 64, 1860) are most of them affected with chancre, or constitutional syphilis."

"In Sweden and Norway syphilis often commits considerable ravages."

"In England it is remarkable, more particularly for its frequency and extension, which results undoubtedly from the want of a system of inspection of public prostitutes."

Page 48. "Syphilis, in the European ports of the Mediterranean, is still remarkable for its relatively great frequency, and for its intensity." Page 49, "on the coasts of the Adriatic, syphilis, as we know, is equally common, but more severe. In Venetia, Dalmatia, Istria, Turkish Albania, and in the interior of those countries, as far as the Tyrol, it puts on the characters of an epidemic disease. It presents these same characteristics in the north of Turkey, and especially in Servia, Bulgaria, Moldavia and Wallachia, as far as the borders of the Black Sea."

Page 50, "In India, Schanks observes that it is not uncommon to see one-third of the sick in hospitals affected with this disease."

"In the Bombay Presidency," says Kinnis, "venereal diseases commit dreadful ravages; they alone furnish about one-sixth of the admissions into hospital, augment the sick list, deprive the army of efficient men, and undermine the constitution of many, or render them unfit for military service."

Page 51. "Gauthier and Armand agree in recognizing its great frequency in the Chinese empire, chiefly in the seaports and on the whole coast. * * * * * * "This disease, which is the first of all to be dreaded on arriving in China, is met with everywhere, he tells us, and its great frequency is in proportion to the masses of the people ag-

glomerated together, and the amount of their intercourse with foreigners."

"In Japan, where prostitution occurs very extensively, syphilis is also very common; but in that privileged country this disease is in reality extremely mild."

Pages 52 and 53. Oceanica—"Syphilis is frequent and severe in the Moluccas, where it commits, according to Sesson, greater ravages than when it appeared in Europe. The more wretched of the Malays, adds that author, are for the most part ruined by this disease, the symptoms of which constitute the disgusting train of corroding ulcers which invade every part of the body."

"On the Australian continent, and especially in Van Dieman's Land, since the year 1834, this disease, by Dempster's account, extended to such a degree that it is now spread over the whole country, at least amongst the Europeans living in it. The same course is run by syphilis on some of the Polynesian groups of islands, and especially in the Marchesas, and in Gambier islands."

"AFRICA."

"Southern Africa.—If, as Chapotin asserts, syphilis prevailed but slightly at the beginning of this century in the Mauritius, venereal affections have since appeared there in the most hideous forms. "We have seen a great number, says Sesson, in which the symptoms attained a maximum of intensity. * * * * * * Mounier states that syphilis, and acute or chronic inflammations of the abdominal viscera, are the affections most common and most severe amongst the natives of the Island of Nossibé. In Madagascar, syphilitic affections, known only within the last few years, have nevertheless, already become greatly developed, and their course is comparatively acute and rapid."

"Nubia and Abyssinia, Central Africa.—According to

Brocchi, and d'Ebn-el-Junsy, syphilis has become a real calamity in the negro countries and especially in Darfour, where it is known under the name of the French disease. This malady, which Pruner affirms to have been imported into Cordofan and Sennaar by troops coming from Egypt, assumes, as Veit and Brocchi assert, most of the characters of a morbid endemic condition. In the same way, after having appeared, at the commencement of the present century, in the confined valleys of Abyssinia the disease in question spread widely and rapidly, while it has, until very recently at least, respected the inhabitants of the Gallas countries." Pages 54 and 55.

"Reliable authors report that syphilis, though frequent in Egypt, especially at Cairo, is nevertheless mild there." Page 55.

"In Algeria, this disease is widely spread, as shown by the observations of Hermann, Schonberg, Langg, Bertrand, Armand, etc. Funari states that it is especially frequent and malignant since the French occupation; while Delean, Armand, Daga, agree in thinking that the ravages which it commits are attributable to the negligence of the Arabs. At Ghadames, says Dr. Hoffman, syphilis appears to me to be characterized by the predominance of cutaneous affections. After these come exostoses, then indiscriminately, and with equal frequency, bucco-pharyngeal affections, ulcerative coryza, etc. This terrible disease is transmitted to every family, either by inheritance, or, exceptionally, by direct contagion, *i. e.*, by chancre, or almost always by the contagion of secondary lesions, acting by various channels, and especially by the mouth, which becomes infected by contact with cups and other objects used in common." Pages 55 and 56.

"West Coast of Africa.—At the present syphilis is equally

frequent on the coast of Sierra-Leone, in the Bight of Benin, at Biafra, and in the neighboring islands. Daniel informs us that in the kingdom of Benin, and along the river of the same name, this disease is one of the most common and most fatal of all those to which the male inhabitants are exposed, its predominance in that sex being well marked. A great number of them die in their youth, for want of the necessary remedies. It is not rare to see the symptoms continuing during two-thirds of the life of individuals. He says, 'the severest forms of syphilis which came to my knowledge were phagedenic, gangrenous, and malignant ulcers, attacking pretty indiscriminately both sexes; virulent gonorrhœa, nodes, cutaneous eruptions, and most of the other syphilitic lesions are prevalent there, and very often resist the rational and energetic treatment of European physicians.'" Pages 56 and 57.

Baumler says: "We will only allude to the fact that in the South Sea Islands the disease threatens to exterminate the natives, and that in South America, but still more so in Mexico, it is extraordinarily prevalent. Baumler on Syphilis, Zeimssen's Cyclopedia, 1875, page 20, vol. 3.

Of syphilis in Mexico, Lancereaux says, page 58: "It has been generally agreed to admit that syphilis has attained a greater extension in Mexico than in most other parts of the surface of the globe.

"In Central America syphilis is as common as in Mexico." Page 59.

"In the Brazils it is frequent and severe amongst the Indian population which has any intercourse with Europeans. * * * It is common in Bolivia, Peru, Chili; and in the States of Rio de la Plata. Tscudi observes that syphilitic diseases are so widely spread throughout the whole Argentine Confederation, that even in the most iso-

lated localities, individuals are met with having great disfiguration of the face. Oister states that one-third of the population of Cordova is affected with syphilis, and that individuals suffering from that disease are seen by dozens begging in the streets." Pages 59 and 60.

"Syphilis in the United States of America does not differ from the same disease in Europe; amongst the negroes, however, it is frequent and malignant, as it is also among the Indian tribes in the West, since they began to mix with Europeans." Lancereaux, page 58.

As additional evidence of the prevalence of syphilis in the United States, it is proper to state that a number of able and conscientious men—among them Dr. S. D. Gross and Dr. A. L. Gihon—estimate that 2,000,000 of a total population of 40,000,000 in the United States are at present infected with syphilis in either its primary, secondary or tertiary stages. To those who regard as fanaticism the statement that one twentieth of our population is suffering from syphilis, I ask you to examine the newspapers from this or any other portion of the Union and see how many of them are free from flaming advertisements extolling some quack remedy for syphilis. Many of these advertisements kindly referring, by permission, to distinguished preachers, lawyers, judges, Governors and United States Senators, who have been cured by these remedies, of "enlarged liver," "jaundice," "torpor of bowels," "skin diseases," "scrofula," "rheumatism," "gout," "paralysis," etc., through the long list of euphonisms by which syphilis is known to these gentlemen who would spurn the base insinuation that they had ever had the loathsome disease. I have counted in one daily newspaper ten advertisements of quack cures for syphilis. The religious magazines and newspapers are dis-

gustingly afflicted with such advertisements of syphilitic remedies. The home altar is thus invaded by obscene and disgusting advertisements of syphilis cures. Occasionally these advertisements are polished by certificates of eminent and irreproachable divines, who certify that by these remedies they have been cured of "chronic skin diseases," "coppery blotches of skin," "chronic ulcers," "rheumatism," "baldness," etc. In these certificates we see illustrations of Dr. Fothergill's words when he says: "The austere life of an archbishop or a cardinal is not incompatible with early self-indulgence, with its consequences."

In the United Kingdom of Great Britain the proportion of population infected with syphilis has been estimated to be about one-twentieth of the inhabitants of the kingdom.

If it be desired to examine the remarkable prevalence of syphilis in Great Britain, it would be well to search the records of the vast hospitals, dispensaries and other charitable institutions. Here are interesting data for the inquirer:

"Of the 6,000 out-door surgical patients annually treated at St. Bartholomew's Hospital, nearly one-half are said to labor under some form of venereal disease. At Guy's Hospital 25,000 cases of a similar character are annually prescribed for; while at the Royal Free Hospital they amount to the frightful number of 42,705, or 117 cases on an average a day. At King's College, University College, St. Mary's, Westminster, Middlesex, and St. George's Hospitals the number of cases varies from 20 to 33 per cent. of all the surgical out-patients daily seen at these institutions. At the Seaman's Hospital, Dreadnaught, the number of cases daily treated is about fifty, consisting chiefly of sailors of the merchant service. At the Lock Hospital upwards of 200 out-patients, the subjects of venereal diseases, are daily

observed; and at St. Thomas' Hospital one half of the out-patients are similarly affected.

Of 100 eye patients who, on an average, apply every week for relief at St. George's Hospital, 30 per cent., according to Mr. Tatum, are syphilitic; and at the Ophthalmic Hospital, Moorfields, the largest eye infirmary in London if not in the world, Mr. Jonathan Hutchinson estimates the number of syphilitic cases at 20 per cent. At the hospital for throat diseases the number of syphilitic cases is about 15 per cent.; and in the various metropolitan charities for skin diseases one-eighth to four-fifths."

2d. Syphilis is propagated by contagion, and to eradicate the disease from a country all contagion must be destroyed and fresh importations thereof prevented; and that peremptory measures for dealing with a (this) spreading pest are indispensable.

This is a proposition so clear, so patent, so incontrovertible, that it is perplexing to determine what testimony to adduce in its support.

Syphilis can only be propagated by contagion. It can be contracted by means of sexual congress, and is readily contracted by inoculating an abraded surface of the body with syphilitic virus derived from extra-venereal sources, as in the following instances: contact of blood of syphilitic subject with abraded surface, mucous patch on lip or tongue, surgeon's or dentist's instruments contaminated with blood or virus, contaminated eating or drinking utensils, such as tumblers, cups, spoons, knives, forks, napkins, etc., daily in use on railroad trains and in hotels and restaurants, cigars and cigarettes moistened in manufacture by mouth of person the subject of mucous patch of mouth, children's toys, blankets, sheets, towels, bathing suits, and fancy costumes rented for balls, the kiss of the lover, husband or

father, by the child nursing at the breast, and by heredity. It must be admitted that in the vast majority of instances syphilis is contracted in consequence of illicit sexual congress. This, then, brings us to a brief consideration of the influence of prostitution in the propagation of syphilis. It is altogether foreign to the scope and purposes of this paper to seek to trace the causes and remedies of prostitution. To attempt to look critically into the doleful history of this revolting subject, from the twilight dawn of man's chequered career on earth to its noonday splendor of this nineteenth century, is a task inviting neither to you nor myself. In this discussion I shall regard and treat prostitution as a necessary evil which has blotted the pathway of man in every age; which exists at the present day to a frightful extent, entailing woe, disease, poverty and death upon mankind. Especially is this true where the State fails to so control these unfortunate beings as to render them harmless to the greatest possible extent. The subject of prostitution, when proposed for discussion or examination, has been handled with a fastidiousness that is both pitiable and contemptible; yet it has in it all that should arouse the keenest sense of humanity, and evoke the charity of thought and active soulful efforts of the good and pure in heart in every land, seeking a remedy. No man appreciates a refinement and delicacy of a community more than myself. But for that criminal fastidiousness which would ignore the terrible ulcer upon the social system which prostitution must be admitted to be, because forsooth delicacy would be violated in its investigation, I say away with such delicacy; it springs not from the heart, it does not respond to man's warm instinct for mankind; it may appear white and beautiful in its outward show, but within it is a repulsive charnel-house full of rottenness and dead men's bones. As

bearing directly upon the question in hand it is proper just here to try and ascertain what proportion of the women of the land is to be reckoned under the head of those of whom it has been said: "She forsaketh the guide of her youth, and forgetteth the covenant of her God." "Let not thy heart decline to her ways, lest thou mourn at last, when thy flesh and thy body are consumed." It is, of course, impossible to present accurate statistics of the number of these unfortunate women. Competent men examining the question have given us the following data:

In 1871, the number of public prostitutes in the United States, was estimated to be one hundred thousand.

In 1872, a prominent writer, Mons. Anner, estimated the number of courtezans in Paris alone at sixty thousand.

In 1869, a careful and conservative writer places the number of these women in the United Kingdom of Great Britain at three hundred and sixty-eight thousand, London alone supporting nearly eighty thousand of these unfortunates.

When it is remembered that from 15 to 25 per cent. of these women are infected with syphilis in its communicable stages, and that these must necessarily transmit this disease to the men having sexual intercourse with them, and these men in their turns transmitting it to yet other women—but too painfully often the innocent wife, and through the wife to children—what an appalling number of centres for disseminating this loathsome disease. To further argue that peremptory measures for dealing with this spreading pest are indispensable is but to insult the intelligence of the most ordinary mind. The mere statement of the facts furnishes an unanswerable argument. As Spencer is content to quote Lancereaux, it is proper just here to let Lancereaux speak for himself on the question.

He says: "All other things being equal, syphilis rages with greater frequency in proportion as prostitution is less watched over."

3d proposition. Syphilis is a terrible constitutional disease, of widespread prevalence, threatening to undermine the health and vigor of nations, and seriously impairing the health and strength of the national defense.

1st. Syphilis is a terrible constitutional disease. Let us appeal to high authorities for a solution of this question.

Sigmund, after examining into all the cases of syphilis treated by him from 1849 to 1876, declared that 'the disease (syphilis) was on the increase both relatively and absolutely, and on account of its multiform character, the gravity of its lesions, and the likelihood of its transmission to posterity, it was the worst affection that cursed humanity."

Dr. E. A. Parkes, Spencer's countryman, and one of the very highest authorities in the world, says: "It is a question whether a large majority of the young men of the upper and middle classes do not suffer in youth from some form of venereal diseases. In the lower classes it is perhaps equally common." Another of Mr. Spencer's countrymen of highest professional authority, Dr. B. W. Richardson, says: "The poison of this malady once engrafted into the living body, and producing its effects there, leaves, according to my experience, organic evils which are never in the whole of a lifetime completely removed. Of the many examples of this form of disease which in thirty years of medical life I have seen, I can recall not one in which some permanent evils have not been inflicted. * * In a word, this communicable disease, though the most controllable, is probably, taking it all in all, the most prolific of injury to the human race."

The distinguished Dr. Marion Sims says: "But a greater

scourge than yellow fever, cholera and small-pox combined is quietly installed in our midst, sapping the foundations of society, poisoning the sources of life, rendering existence miserable, and deteriorating the whole human family."

Dr. S. D. Gross, America's greatest surgeon, in an address before the American Medical Association, says of syphilis: "But here is a disease a thousand times worse than the most deadly epidemic, doing its work slowly, and as it were in disguise and darkness, ruining entire families, destroying many of our best men and women, and laying the foundation of untold misery, wretchedness and woe, not unfrequently extending through several generations, and literally poisoning the very foundations of life."

Dr. J. W. White, of Philadelphia, says of syphilis: "A malady which is perhaps the most widely diffused and the most serious in its immediate and remote effects of all the ills that flesh is heir to; which to-day in this enlightened country and period is believed to affect at least two millions of people out of a population of fifty millions, and which often follows its victims from early manhood or womanhood to the grave, or perpetuates its vicious influences in succeeding generations."

Dr. Acton is quoted by Spencer as follows: "Even Mr. Acton, a specialist to whom more than to any other man the Acts are due, admitted before the Lord's Committee that 'the disease is milder than it was formerly.' It is amazing that a man of Mr. Spencer's standing should have resorted to perversion of testimony in order to fortify his position. Here is the full statement of Acton on the subject: "I doubt whether venereal complaints, although evidently more severe formerly, were ever more common than at present, or whether since syphilis was first treated in hospitals, the large proportions here noticed, namely, two out

of three out-patients at the Free Hospital, nearly one in two at St. Bartholomew's, one out of every three at Dreadnaught, one out of four in the army, one out of seven in the navy, at any former period suffered with venereal disease; and yet many believe that the disease is declining. That such is not the case, if numbers be any criterion, must be admitted by all who weigh well the above statistics and compare them with the statements met with in nearly all the books that have treated of syphilis." But of all the unfairness of Mr. Spencer, is the most amazing perversion of the testimony of Lancereaux. Spencer says: "And the latest authority on syphilis, Lancereaux, whose work is so highly valued that it has been translated by the Sydenham Society, asserts that: 'In these cases, which are far from being rare, syphilis is but an abortive disease; slight and benignant, it does not leave behind it any troublesome trace of its passage. It is impossible to lay too much stress upon this point. At the present day especially, when syphilis still inspires exaggerated fears, it should be known that this disease becomes dissipated completely in a great number of cases after the cessation of the cutaneous, and perhaps sometimes with the primary lesion.'" A charitable view to take of the subject would be, that Mr. Spencer had never seen or read the work of Lancereaux, but copied the above quotation from some review of the book. Such, however, is not the case. The note appended by Spencer says: "This testimony I quote from the work itself. See vol. 2, p. 120."

In fairness, Mr. Spencer should have plainly stated that Lancereaux was then speaking of syphiloid, which that author says is comparable to varioloid as distinguished from variola. Does it not seem wonderful that Spencer should have permitted himself to skip over the whole of the first volume, and go to page 120 of the second volume, to fish

out a statement such as the one just referred to? And, worse than all, wholly fail to quote the sentence immediately preceding the quotation he made, and that sentence qualifying the whole quotation! Had Spencer desired to have stated Lancereaux's views with fairness, he should have quoted from volume 1, page 28, as follows: "The epidemic of the 15th century is not unique of its kind, and since that period there have been several endo-epidemics, evidently syphilitic, or at least very analogous to that epidemic. * * Even in our day, when it comes to develop itself under special conditions, syphilis puts on a thoroughly malignant character." Again, page 45, vol. 1, Lancereaux says: "Syphilis, as we may conclude from what has already been said, still runs a course differing but little from that of the 15th century in certain countries of the north of Europe, and especially on the coasts of the Baltic and of the German Ocean, in Jutland, Ditmarsch, Schleswig Holstein, on the coast of Sweden, etc." Or, on page 61: "This study brings out the important fact that while there are localities in which syphilis is generally mild, or has even been unable hitherto to become acclimatized, or to develop itself, there are others in which that disease, widely distributed, generally shows itself in the most hideous and severest forms; such, for instance, as the great seaport towns, especially those where the temperature is low and the abuse of spirituous liquors great; further, certain countries in which the disease presents itself with a totality of symptoms differing but little from that which has been observed in the course of the severest epidemics. It is in those places, therefore, or rather in the various circumstances of individuals inhabiting them, that we look for the reason of the epidemics of syphilis, and especially that of the renaissance period. But the circumstances which in certain places appear to aggravate syphilis—want of acclimatiza-

tion, hard work, excesses, overcrowding, and perhaps also contamination from one race to another—are precisely those under which the great epidemic of 1495 developed itself." Or had Spencer turned three more pages from the quotation which he pretended to make, i. e., to page 123, volume 2, he would have found the following: "The general duration of syphilis is so variable that it is impossible to determine its limits. While this disease, in some cases, completes its evolution in a few months, and with a course comparatively acute, it is seen under other circumstances to be prolonged during the life of the individual, or even to be transmitted to several generations." Again, page 126, volume 2: "As regards the second point, that of knowing what is the period in the evolution of syphilis at which the modified organism succeeds in re-entering upon its normal and physical condition of life, I admit, and therein I agree with Diday and Bazin, that it is not possible to regard an individual as safe from syphilitic affections until he has passed through all the phases of the disease." Or, had Mr. Spencer turned to page 202, vol. 2, he could have read Lancereaux's views as follows: "I have now to speak of the prognosis, not of such or such an isolated modification, but of the disease considered in its totality. That syphilis is a serious disease is an undoubted fact." * * Page 203: "The visceral lesions, in consequence of which syphilis sometimes ends in death, the cicatrices or deformities which may result from a lesion entirely local, the possibility of transmission by contagion or inheritance—such are the circumstances which, for the individual as well as for families, or even for society, render syphilis a formidable disease. The more deep-seated, extensive and ancient the visceral lesions are, the more fear should syphilis inspire, and this fear should be the greater the more the organ affected is essential to life. In other

words, the syphilitic affections of the air passages, of the heart, and of the brain, are those which most compromise existence, being capable, in certain cases, of causing rapid if not sudden death. Lesions of the liver, although less formidable, are far from being without danger, whether from the ascites which they occasion, or from the hemorrhages and cachexia which accompany them. The same may be said of the vascular blood glands, which lead equally to cachexia and marasmus, and place the organism in the conditions most favorable to the development of the ultimate complications, pneumonia and erysipelas. In most cases, in the actual absence of any manifestations, syphilis may be regarded as the sword of Damocles, which only waits for an opportunity of striking afresh the individual it has already wounded." Page 204, Lancereaux says: "In fact, there are serious grounds for regarding syphilis as one of the causes of the decrease of strength, the diminution in size, and the degeneration of certain families."

I will give you but one other quotation from Mr. Spencer's favorite authority, Lancereaux. I could give you numbers of similar ones, for both volumes actually swarm with them. I have quoted so fully from Lancereaux to show that Mr. Spencer was unfair in quoting Lancereaux as sustaining his assertions. Listen, now, to what he says of this decreasing disease of Mr. Spencer: "If the syphilis of our day is not comparable to that of the Naples epidemic, that may depend simply upon differences in the hygienic conditions. The severity of the endo-epidemics of syphilis which have raged since the end of the 15th century is, at the very least, in favor of this view. If in those epidemics syphilis appeared more intense and more malignant, it was only by virtue of certain accessory causes which presided over its extension, and thus it is not proved that

syphilis is less severe now than it was at the climax of its existence."

The following is a tabular exhibit of the diseases produced by syphilis:

1st. Cachexia.

2d. Attacking the integumentary system it produces the following pathological conditions, as classified by Cornil:

"1. Erythematous syphilides. (Roseola.)	Diffused. Macular. Papular.
2. Papular Syphilides.	Small papules.—(Papular or papulo-granular syphilide); Miliary syphilide; Conical, lichen-like syphilide; large papules—Patches of papula-lenticular syphilide; Papulo-tuberculous; Papulo squamous.
3. Vesicular Syphilides.	Varicelliform. Eczemiform. Herpetiform.
4. Papular Syphilides.	Acneiform. Impetiginous. Ecthymous (sometimes superficial and precocious, sometimes late and ulcerated)—ulcerous ecthyma.
5. Bullous Syphilides.	Pemphigus. Rupia.

6. Gummous and tubercular syphilides."

3d. Alopecia.

4th. Onychia and Paronichia.

5th. In the mucous membranes of the mouth and intestinal canal syphilis produces: erythema, mucous patches, papules and vesicles, psoriasis, schlerosis, gummata, ulceration, stricture, diarrhœa and dysentery.

6th. Attacking the liver it produces congestion of liver,

icterus, hepatitis, gummata, amyloid degeneration.

7th. Spleen, enlargement and gumma of.

8th. Nose: Erythema, mucous patches, ulcerations, ozena.

9th Larynx.—Erythema, superficial ulcerations, mucous patches, chronic inflammation with hypertrophy of mucous membrane, vegetations. } Secondary or superficial lesions.

Deep ulcerations, Gummy tumors, Perichondritis and chondritis, caries and necrosis. } Tertiary, or deep lesions.

10th. Trachea.—Disease similar to those of larnyx, with addition of stricture.

11th. Ulceration or stricture of bronchi.

12th. Lungs. Consumption is by no means as rarely produced as is generally supposed.*

13th. Heart.—Diffuse myocarditis, and gummatous deposits of, and in the arteries; endo-arteritis, occlusion, aneurism.

14th. Male Genitals.—Syphilitic epididymitis, gummy tumors, orchitis, functional impotence.

15th. Female Genitals.—Ovaritis, ulcerative hypertrophy of cervix uteri, tubercular patches and gummata of vagina.

16th. Kidneys.—Nephritis, gummata and amyloid degeneration of.

17th.—Muscular system.—Myositis and gumma of.

18th. Ligaments and Joints.—Gummy deposits around the joints, chronic thickening of the soft parts, and acute inflammation of the capsule, with hyperæmia of the sheath of the tendons, attended by serous effusion, etc.

*Dr. Pancritius, of Berlin, reports one hundred and ten cases.

19th. Bones.—Periostitis, ostitis, osteomyelitis, caries, necrosis.

20th. The Eye.—Choroiditis, corneitis, iritis, retinitis, ulcers of conjunctiva and eyelids, ptosis, etc.

21st. Brain and Nervous System.

Dr. Dowse—one of Mr. Spencer's countrymen—in his late work on Syphilis of the Brain, says: "Now, of all the inhabiting poisons, there is not one which plays so important a part in upsetting those primary laws which govern the stability of the nervous system as syphilis. * * * The universality of syphilis, and the constitutional changes which it gives rise to, both in the acquired and hereditary form, as well in derangement of mind as in defects of body, are, I am fully convinced, only just beginning to receive anything like their due share of attention. * * * We have only just commenced to tread firmly upon this forbidden ground which yet awaits exploration.

"We have noted in writing of the pathology of syphilis that it can affect the brain, the spinal cord, the nerves and their membranes, in several ways.

"1st. By pressure from gummatous outgrowths of the cranial bones, or from inflammation of the endosteal lining through which the nerves pass in making their exit through the skull.

"2d. By pressure from growths in the membranes, of the dura mater, pia mater, or arachnoid membrane.

"3d. By growths commencing in the brain substance, in the tunica adventitia of the vessels.

"4th. By vascular changes, commencing in the inner wall of the vessels, leading to mal nutrition, exudations, hemorrhages, softening, atrophy and thrombosis.

"5th. By changes in the sympathetic nerve ganglia, most frequently associated with protoplasmic and albuminoid

visceral changes. It is at the beginning of these that we find functional nerve troubles to arise.

"6th. By changes in the vaso-motor, and intrinsic ganglia, and trophic nerve plexuses of the heart, spleen and uterus, associated with both acquired and hereditary syphilis, but more particularly the latter."

From this array of pathological conditions we need not be surprised to find, as we often do, subjects of syphilis of the nervous system suffering from intense cephalalgia, vertigo, epilepsy, loss of memory, dementia, hemiplegia, paraplegia, aphasia, locomotor ataxia, chorea, etc.

There are other and serious diseases produced by syphilis not included in the tabular exhibit. From the formidable array of pathological conditions and diseases which we have seen produced by syphilis, does it require an elastic conscience to affirm that "syphilis is a terrible constitutional disease, threatening to undermine the health and vigor of a nation?" If this frightful disease—Briareus-like, with its hundred arms—striking down to poverty, disease and death, men, women and children, at every turn in life, is not fiendish enough to constitute it, in the eyes of Mr. Spencer, a terrible constitutional disease, then indeed would we ask him to show us one single disease in the whole catalogue which is half so terrible as this one. Notwithstanding Spencer's efforts to show that syphilis is a trifling and decreasing disease, I challenge him to produce a disease which presents one-fourth of the terrible constitutional manifestations which syphilis daily, hourly evidences. The efforts of Mr. Spencer to heap contempt and contumely on good and true men who would endeavor to control the ravages of this truly frightful disease, will only reflect discredit upon himself.

Truly does Dr. Dowse say: "Syphilis once acquired, main-

tains a tendency in the body to every morbid change that comes under the head of active hyperæmia, inflammation and inflammatory growths. A robust, healthy man is inoculated with the syphilitic virus, and in a very short time he becomes a physiological and pathological curiosity; his whole being undergoes a change; in fact he is transformed into a living mass of disease. His body becomes enfeebled, his nervous system weakened and his intellectual powers impaired. * * * Secretions of his body can, if inoculated into other living, healthy tissue, produce a diseased and unhealthy inflammatory action, and if he gives origin to his species the result will be a want of normal development in the offspring at once suggestive and deplorable. On the other hand he may contract syphilis, and the poison from some constitutional or other cause may not produce that active change which is made manifest by skin symptoms, ulcerations of the throat, and periosteal nocturnal pains. But in after years his health will suddenly give way, his digestive powers become faulty, he will lose his especial aptitude, it may be, either for business or pleasurable pursuits, he falters in his gait, becomes confused in conversation, and has attacks of minor epileptic seizures. * * There is something subtle and uncertain about syphilis which puzzles the histologist, pathologist and clinicist alike, and it is probably this which gives it so much scientific interest. Yet there is a profundity of research open in the study of this disease which rises even above scientific investigation; I allude to its heredity, diagnosis and treatment. It takes a range far wider than any other in the whole field of pathology."

Fournier says: "I have no occasion, speaking to professional men, to repeat my premises—that syphilis is a serious, very serious malady, capable of giving rise, when

left to itself or improperly treated, either to important illness, serious infirmities, or even (and that more frequently, much more frequently than is said or believed) to a termination still more to be regretted—death itself. This is of usual and common knowledge."

Dr. Sturgis: "Syphilis is essentially a chronic disease; is liable to attack every tissue in the body, and its later manifestations often appear so long after the early symptoms, as to cause its connection with many diseases to be overlooked. Thus grave and deep-seated affections of the eye, serious lesions of the nervous system, and many maladies of the viscera depend upon this disease as their origin, and yet are overlooked, either because the earlier syphilitic symptoms have escaped notice, or because the patient has been ignorant of their connection with syphilis. And yet these same diseases may be sufficient to incapacitate men from work, or blast their lives, and make them dependent upon the charity of friends or strangers, without affording them the miserable gratification of release by death." Buck's Public Hygiene, vol. 2, p. 541–2.

Syphilis seriously impairs the health and strength of the national defense.

I had collected a vast amount of statistical data from the armies, navies and merchant marine service of the various civilized nations, which fully and unequivocally demonstrate this proposition. The time at command precludes the presentation of the data here. I will rest the matter for the present upon the opinion of the highest sanitary authority in Great Britain, Dr. E. A. Parkes, "Professor of Military Hygiene in the Army Medical School." This distinguished authority says of soldiers suffering from venereal diseases: "And in the army the State yearly suffers a large pecuniary loss from inefficiency, and early invaliding. In

campaigns the inefficiency from this cause has sometimes been great enough to alarm the generals in command, and increase considerably the labor and sufferings of the men who are not infected. * * * * * There is an appalling loss of service every year from the immediate or remote effects of venereal disease. It should be understood, also, that the action of syphilis is long continued. Many soldiers die at Netley from various diseases, whose real affection has been syphilis, so that the influence of this cause is very imperfectly indicated by the number of admissions and service lost under the head of enthetic diseases."

Let us now examine our fourth proposition: Innocent women and children are destroyed by syphilis.

The dense ignorance of the laity, together with the incredulity of some members of our profession upon the subject of syphilis of innocents, is so truly calamitous in its results, and often evokes the most uncharitable judgments of the integrity and purity of those who are so unfortunate as to innocently contract this loathsome disease, which should be reserved alone for the libidinous. When we would discuss the subject of syphilis of the innocent, the blunt reply is made, "yes, this is the old story of infection in a privy." Not so my purpose. Let us examine this subject of syphilis in innocent men, women and children, with a sense of seriousness and fairness becoming the man who would attempt to elucidate a scientific problem. Let Mr. Spencer approach this frightfully responsible task and evoke by his cold synthetical philosophy such lessons as may please his fitful imagination. But, let the physician remember that the integrity of man; the purity of woman, which is above all the gold of Ophir; the happiness and peace of the family circle, as well as the honor of a community, may be ruthlessly blasted, if a philosophy founded upon imagin-

ation and dogmatism is permitted to usurp the place of scientific truths builded upon the intelligent observations of daily life. Amid dangers so weighty, it becomes the duty of the laborer in the field of scientific medicine to harvest and present the facts of the subject in such an unbroken column as shall enable him to beat down the pretentious theory even of the philosopher, and thereby require him and his philosophy to pale into insignificance when they would attack the interests of humanity and the established truths of science.

Mr. Spencer's credulity has been startled, amazed, at the perversion of testimony by which it is made to appear possible that syphilis is destructive of innocent women and children. Amid the plentitude of testimony at command, and from the highest professional sources, it is embarrassing only to decide when to stop quoting. Let us take Spencer's favorite, most recent, and highest authority—Lancereaux—and see what he has to say of syphilis of innocents. Turn to page 25, vol. 1: "A considerable number of children contracted the disease from their diseased mothers and nurses." Page 37, vol 1: "It (the epidemic at Jutland) was chiefly transmitted by spcons, drinking-vessels, clothes and bedding." Page 39, vol. 1: "A midwife of Saint Euphemia had on her right hand a pustule (chancre); this woman who went on practicing her profession, communicated syphilis to more than fifty pregnant women, whom she either delivered or examined. During this time the disease spread to the children whom their mothers were suckling, and to the husbands." Lancereaux gives the details of more than fifty innocent women, children and men infected at Nerac by a child, the subject of syphilis. Turn to page 44, vol. 1: speaking of the disease of Chanvanne, Lure, and some more recent epidemics, "The means of

transmission are, in general, kitchen utensils, linen or other objects, sometimes actual contact, but rarely, it appears, the act of coition." Lancereaux says of the disease in Algeria: "This terrible disease is transmitted to every family, either by inheritance, or, exceptionally by direct contagion, i. e. by chancre, or almost always, by the contagion of secondary lesions, acting by various channels, and especially by the mouth, which becomes infected by contact with cups and other objects used in common." Again, page 29, vol. 1, Mr. Spencer will find an account of one hundred and eighty persons inoculated with syphilis by a bathman in Brunn, by the process of cupping. If he will turn to page 244, vol. 2, he will find an account of seventy more cases of syphilis caused by cupping. Moreover, while Mr. Spencer was delving into the mysterious contents of page 120, vol. 2, he could have, by carefully reading from pages 228 to 247 inclusive, found a record of more than four hundred innocent persons contaminated with syphilis; these exclusive of epidemics and heredity. In both volumes more than a thousand innocent persons are shown to have been contaminated with syphilis. And if he had read the first line on page 238, vol. 2, he ought to have quoted Lancereaux more fairly, for that authority there says, "It would be easy to collect a greater number of facts of this kind, but the preceding are sufficient, we think, to render intelligible the necessity of a medical police for preventing similar disasters." Or, had Mr. Spencer desired to know Lancereaux's views upon congenital or hereditary syphilis, he could have read as follows, on page 203, vol. 2: "Syphilis generally renders the child responsible for the infection contracted by the author of its days, and in that respect is to be considered as one of the most formidable of diseases. How many children sickly, puny, degenerate, or doomed to certain death from having

inherited this disease. How many families extinct from not having escaped this scourge of reproduction."

But let us take the testimony of several of the highest medical authorities in Mr. Spencer's own country:

Sir Thomas Watson says: "It (syphilis) counts its victims not only in the ranks of the vicious and self-indulgent, but among virtuous women and innocent children, by hundreds and thousands."

Sir William Jenner says: "I cannot too strongly express my conviction of the gravity of syphilis at the present time. It is one of the most fatal diseases we have in this country. Children and others suffer largely from it without any act of their own."

Mr. Simon (who has been quoted by Spencer) says: "The infections of the brothel are oftentimes carried into simultaneous or subsequent wedlock, in some cases fixing their obscene brand even on the offspring of such marriages." * * * * "I have not the least disposition to deny that venereal affections constitute a real and great evil for the community."

Sir James Paget says: "It would be difficult to overstate the amount of damage that syphilis does to the population. * * * A number of children are born subject to diseases which render them quite unfit for the work of life. We know that certain diseases of the lungs, the liver and the spleen are all of syphilitic origin, and that the mortality from syphilis, in its later forms, is every year found to be larger and larger." * * * * "I have seen five surgeons die and fifty others suffer more or less from the infection received from patients."

Dr. S. D. Gross, of Philadelphia, relates the following: "An epidemic of syphilis occurred at Brives, a little town in France, in 1873, fifteen women, nine children, and ten

men having been affected in rapid succession. Great excitement for a time prevailed, wife accusing husband, and husband wife, of conjugal infidelity, when it was at length ascertained that the cause of all the trouble was a midwife who had a chancre upon one of her fingers, contracted in the exercise of her profession, and who had thus carried the poison from house to house."

Let us now examine that holiest and best of estates—matrimony—and see if that loathsome, degrading, dangerous disease, syphilis, slyly invades the home circle, and if or not it attacks only the lewd, lustful, licentious; and if or not it mercifully spares the innocent, pure and lovely wife and children. Further than this, let us determine if or not a young man having had syphilis several years prior to marriage, may infect the wife of his bosom and procreate children which are syphilitic at birth. In discussing this question, I do not propose to detain you with voluminous citations of authorities. I shall state plainly the admitted facts of the science, and draw such lessons therefrom as may seem proper to a full elucidation of the questions under consideration.

1st Proposition—A man contracts syphilis one or more years prior to marriage; all primary symptoms disappear, he is yet liable to infect his wife through secondary manifestations of the disease.

2d. If the mother escapes direct infection from the husband, the husband can yet infect his wife by procreation of a syphilitic child, which may affect the mother. The more recent the syphilitic symptoms in the husband prior to marriage, the more probable is the infection of the child, and thus indirectly the mother.

3d. If the wife is contaminated through secondary symptoms, the child or children almost necessarily become syph-

ilitic if carried to term. Very often the disease causes the death of the fœtus in utero, and hence we see from one to seven or more abortions in the mother.

4th. The syphilitic child is dangerous to innocent persons who minister to its daily wants, and may become the centre from which an epidemic of syphilis may occur in innocent persons.

To sustain our first proposition an almost unbroken line of authorities may be cited. Of the authorities cited by Spencer, Lancereaux, Diday, and Hutchinson; also Baumler, Cornil and Fournier, all confirm the statement. Indeed, I would be pleased to have Spencer tell us what distinguished authority fails to confirm this proposition. Fournier, who has investigated this subject with more industry, impartiality, and ability than any other man, living or dead, says: "In the vast majority of cases syphilitic contagions which occur in marriage from husband to wife are due to lesions of the secondary period. Second, that almost invariably these contagions are due to secondary lesions of a superficial erosive character, or at the most papulo erosive, that is to say, lesions which are essentially benign in appearance, almost insignificant, on account of their seeming benignity; without importance and eminently susceptible of being misinterpreted even when they have been perceived. And this is readily understood, this double proposition necessarily results from the nature of things. For, on the one hand, syphilis is infinitely more dangerous during the secondary period than at any other, on account of the extreme multiplicity of its lesions. And, on the other hand, contagions which take place in marriage can only be the result of lesions of so little importance that a husband conscious of his condition, may overlook them or misunderstand their importance. For a husband does not infect his wife inten-

tionally. * * * A husband infects his wife by accident. He transmits his disease to her by the means of some little lesion, so insignificant that he has not suspected its real nature, or may be has not been conscious of its existence. * * * Little secondary lesions of the lips, tongue, and penis—such are the usual sources of contagion in marriage."

To substantiate the second proposition Fournier cites the following authorities: "Ricord, Trousseau, Diday, Dupaul, Cazenave, Bazin, Hardy, Bœresprung, Hutchinson, Bassereau, Beyran, Martinezy, Sanchez, Liegeois, DeMeric, Martin, Parrot, Lancereaux, Kassowitz, Charpentier, Pozzi, Keyfel, Carl Ruge." I could cite a number of others, but these are sufficient. I will quote the words of only two authorities; Jonathan Hutchinson, whom Mr. Spencer regards as the highest authority on the subject, says: "I am firmly of the opinion that, in a large majority of instances in English practice, inheritance of syphilis is from the father, the mother having never suffered before conception." Fournier says: "In fact, how many times have we not seen—and who has not seen—cases of this kind? A young girl in perfect health, marries a man who has had syphilis in the days of his bachelorhood. Some months later syphilitic symptoms appear; this evidently by the means, and by the means only, of her husband. This syphilis of young married people – let us say it incidentally, since the occasion presents itself – is sufficiently frequent, even more frequent than one dares to suppose. You will find the proof of this in the numerous observations collected in different works, as also in the following statistics, which I myself have collected: In a total of 572 syphilitic women, who have come to me in private practice, I find not less than eighty-one who have contracted syphilis from their husbands in the early

days of their marriage. This list is sufficiently eloquent of itself to need any comment." Then remarks our author: "Let, then, families be more attentive to the health of pro posed sons-in-law." *Fournier on Syphilis and Marriage.*

3d Proposition. Fournier says: "The father and mother both becoming syphilitic, what kind of children will be begotten by this infected couple?"

"1st. The child will die before birth."

"2d. Or it will be born with syphilis; and with all the possible and serious consequences of infantile syphilis, which in most cases are almost equivalent to death itself"

"3d. Or, finally, it will be born without syphilis, but with uncertain health; with a weak nature, and an impoverished constitution, which will or may expose it to a rapid death; with menacing morbid tendencies; with a predisposition to certain organic diseases—in a word, in a state of relative primitive decadence. And this is not all. Let there come a second, third, fourth pregnancy, and it may be that this state of things will accompany each of them. * * * Open your books, peruse the observations contained in the classical treatises, in the special collections, and you will find, not by hundreds but by thousands, cases that, from the point of which we speak, always bear witness to the same meaning, and appear as though copied, the one from the other."

Diday says: "And if there be in pathology a truth strictly demonstrated, it is, beyond contradiction, that the frequency of abortion in pregnant women affected with syphilis, and the direct power of syphilis to cause this accident. The annals of the science actually swarm with observations in which three, four, or even six deliveries in a syphilitic mother inevitably terminate either in abortion, or in the birth of syphilitic children."

Baumler says: "Only this much can be positively affirmed, namely, that the product of conception generally dies at an early period when one or both parents have suffered from recent syphilis at the time of conception; and the more recent the general syphilis in the parents at the time of conception, the greater will the liability be to abortion. Hence, while the first pregnancies under these circumstances are generally interrupted prematurely, the later ones—especially when a mercurial course has been resorted to—become longer and longer in their duration, and finally, after a series of abortions or premature births, children may be carried to full term, and be born in a state of real or apparent health."

The venerable Dr. S. D. Gross truly says: "Like apples which rot upon the tree before they are ripe, the children of these persons drop dead from their mother's womb, or, if they are born alive, they are sure to perish soon after birth."

I will not detain you longer with quotations sustaining this proposition. I am prepared, should it be demanded, to present similar testimony from almost every high authority who has written on the subject within the past fifty years.

4th Proposition. Fournier says: "I have often said, nothing is more dangerous than a syphilitic child in a household. The thousand little cares which the rearing of an infant requires, the pettings and kisses which are lavished upon it, become the origin of cases and frequent infection. * * You all know, from having heard me repeat it so often, what a singular power of irradiation and of expansion there is in the syphilis of nurses and nurslings; how it may be propagated at a series of unexpected tangents, and so constitute multiple sources of contagion; how frequently, for example, a syphilitic child affects several persons about it, and how often a nurse infected by a child

transmits the disease either to her own infant, her husband or to another nursling. How often, too, does each of these new contagions become in turn the origin of other contagions. Cases in which these cascades of contagion—if I may use the expression—have been seen as a consequence of the syphilis of an infant, abound on all sides; they positively swarm in our science. * * A syphilitic child has been known to import into a village sixteen, eighteen, and as many as twenty-three infections, and became, so to speak, the origin of a local epidemic." I shall adduce but this one authority in corroboration of this proposition. The views therein stated fully express the admitted teachings of the science in all countries at the present time. It is proper to add that Jonathan Hutchinson who, Spencer says, "is recognized as the highest authority on inherited syphilis, and to whose discoveries, indeed, the identification of syphilitic taint are mainly due," says of Fournier's book, from which these quotations are made: "The subject is treated by one of the largest experience, an acute and original observer, and a trained medical logician. * * I wished simply to afford myself the gratification of expressing publicly my high appreciation of all that he has written, and to acknowledge my frequent indebtedness in the past to the opinions and facts which he has brought forward."

I do not propose to detail the sad experiences of my professional life in witnessing the fearful ravages of syphilis in innocent women and children. I give you one case: A young man contracted syphilis and soon afterwards presented himself to me for treatment. At first his visits were regular and treatment was systematically pursued. Several months elapsed when patient ceased to visit office and discontinued treatment. Nine months after contracting chancre I was called to visit him and found him suffering

from syphilitic paraplegia. With constant use of anti-syphilitic remedies, paraplegia entirely disappeared in several weeks. Patient continued to take medicines for several months after disappearance of paraplegia when he ceased his visits to my office. Two years from appearance of chancre patient, without my knowledge or consent, married. In due course of time the wife was delivered of a child said to have been born at eight months' term. The physician of wife's family attended in accouchement. Three months after the birth of the baby I was called to attend it. Found it puny, old-man-looking, sniffling at the nose, body covered with syphilitic roseola, and having mucous patches on tongue and lips. The mother showed signs of full secondary syphilis, and hardened fissures of both nipples.* The mother was extremely emaciated, and said her "milk had nearly dried up." Said several of her relatives and friends then nursing children at the breast, observing the wasting of her babe, had kindly proffered to partly nurse it for her from their breasts, each to nurse the babe from day to day if the doctor said that milk from these several sources would not hurt it. The mother said that one of her sisters-in-law would nurse the babe from her breast that afternoon if I thought it advisable. Imagine the sense of horror which came over me at the mere suggestion. Several of the most prominent ladies of the city, eager to nurse a child in full bloom of secondary syphilis, with mucous patches on its tongue and lips. What a frightful opportunity for innocently contracting syphilis themselves, and conveying the disease to their husbands and children. I at once positively forbade any one but the mother to nurse the child, and directed the use of cows' milk in addition. Upon leaving the house I drove to the husband's place of

*I am aware of the law of Colles.

business and revealed the sad state of affairs to him. He came to my office the same night when I examined him carefully. Found no syphilitic symptoms on him. Questioned him closely as to his having had syphilis since marriage, when he declared positively that he had never had any venereal disease of whatsoever kind since I had treated him. I know him to be an honorable man and feel certain he told me the truth. I immediately caused an anti-syphilitic treatment to be used with mother and babe. The babe lived two months after I took it under professional care. One day it was again taken in convulsions and expired. The mother gave it one drop of laudanum and a hot bath; when I reached it the flickering taper of life had just gone out. The mother, to this day, innocent of the disease causing the death of her babe, grieves as only a mother can over the loss of her first born, and declares that she killed it with a drop of laudanum. Often do I meet the sad, woeful mother repairing herself to the city of the dead, there to keep sad vigil over the daisy-grown grave of her little lamb. It is now five years since the death of the babe. The mother is the subject of syphilitic phthisis—a sad wreck of a former vigorous woman. Two other children have been born to her. They are sickly, puny, degenerate in appearance, bearing upon their faces the sad story of their lives.* I have in my case-book records of two other instances in which wives and children have been infected with syphilis under similar circumstances.

With all these dangers attending the innocent wife and helpless children of the man who has contracted syphilis prior to marriage and been imperfectly treated, how contemptible and disgusting is the sight to behold such a man pridefully and joyously take upon himself the

*One of these died since the preparation of this paper.

responsibilities of husband and father. See him, as every one of us has seen, enter the church with triumphant mien and undaunted heart solemnly swear before Almighty God to love, honor, cherish and defend the blushing, pure woman who pledges herself to forsake all others and cleave only unto him so long as life shall last. Love her! If he is aware of his condition, and the dangers with which he will surround her, his love will show itself by sparing her from himself. The man who is aware of his condition, and is yet ready to take upon himself such responsibilities has a heart in which the holy fire of love will not, cannot burn. He is prompted by the guidance of concupiscence which will dare all dangers —even to the wife of his bosom—in order that lust shall have its sway. Honor her! Saints and angels deliver her from such dignity and reverence as a marriage like this confers upon her. Cherish his wife! Where, oh, where, can this man find ground upon which to build a rational expectation that he will be able to encourage and support her through life. Encourage and support her, when he will probably in after years lose all aptitude for business, become possessed of a faltering tongue and a confused mind, becoming discontented, irritable, melancholy, and finally seized with epilepsy or paralysis, or stricken down well nigh to death with some serious visceral lesion. Further than this, I have seen such a scene as this end in mania, and have heard the shrieks of the maniac resound through the corridors of his home with curses which chilled the blood of the listener and rendered this once happy home a veritable pandemonium. Where now is the promised encouragement and support to dependent wife and children. But too often they become poverty stricken, and a charge upon the kindness of kindred or friends. Defend her! Against what and whom does she need defense?

Surely it is against himself that she needs protection. Protection from his boorish, contaminating, leprous embraces. Not only does she need to be defended against disease, but also against chill penury and want. In my own town I know three wives who are now in deepest poverty, plying the needle day after day to support invalid husbands, the subjects of syphilis. I know two other wives, who, covered with the sable habiliments of mourning, are weeping over the loss of husbands and children who died of syphilis. In pity for these noble women they have never been made acquainted with the frightful circumstances which have so sorely afflicted them.

These cases are not figments of the imagination. They are stern, cold facts which occasionally present themselves to the eye of the observant physician. These cases are to be found in every city in this vast country. They exist by hundreds and by thousands. The very fact of their existence demonstrates: A woeful negligence of physicians to instruct patients of the dangers of syphilis to self, wife and children, even in marriage in after years; or, second, a shameful recklessness on the part of these syphilitic patients. I am prone to believe that most of the patients err rather from ignorance than intention. We all know with what innocency and self-complacency many syphilitics enter the office of the physician and insist upon an early cure for the reason that they are to be married in from three to six months. Amazing ignorance or recklessness. Seething masses of syphilitic putridity, with the death-angel hovering over them, eager to enter into the hallowed bonds of matrimony. Fathers and mothers of the land, who have watched over and tenderly reared your lovely, pure, innocent girl, here is a promising union into which this man would lead your unsuspecting daughter. Listen! oh listen!

to the words, and profit by the suggestions of Alfred Fournier, when he says: "Let, then, families be more attentive to the health of proposed sons-in-law."

Let the physician realize the solemn responsibility which is placed upon him when a young man comes to be treated for syphilis. Let him plainly tell this man that so long as symptoms of syphilis manifest themselves in his system he is a seething mass of disease, and an especial source of danger to innocent persons; and that under no circumstance can he, as an honorable man, think of marrying until he shall have had two long years of treatment, and a like period of entire freedom from all symptoms of syphilis. It is full time that the voice of the medical profession should be heard with no uncertain sound upon this responsible, weighty duty to society. I confess that we occasionally see men suffering from the worst forms of secondary syphilis marry and procreate children, and yet wife and children show no sign of infection. These cases are but examples of inexplicable exceptions to the rule. In every community you will find a few individuals who, though unvaccinated or unprotected by a previous attack of the disease, expose themselves to the most malignant cases of small pox and yet wholly escape infection. I have, however, never yet heard that such exceptionable instances show the absurdity of availing of the prophylaxis of vaccination.

In this paper, already extended far beyond the original intention of the writer, I have attempted to present for your thoughtful, intelligent consideration some of the arcana of social life which are but too frequently and painfully revealed to the physician. These are not presented for the purpose of demonstrating that concupiscence runs riotous over the land, nor that all flesh is necessarily heir to syphilis. Nay, they are presented to you, physicians, with the

hope of eliciting your comments and experiences, and possibly some remedy may be found in the future which shall prevent as far as possible these heart-rending occurrences. These distressful secrets may not be in the keeping of the philosopher. He, in his cynicism, is not the man to whom the distress of families is made known. No one but the physician can thoroughly know his fellow-man in all his weakness and misery. It is the physician who is consulted as to the welfare of the babe ere it is ushered from its mother's womb. It is his office to see woman, ere the birth of her babe,

> "sustain
> The burden which a mother bears, nor feels
> The weight, with longing for the sight of it."

It is the hand of the physician which receives the infant in its nakedness and helplessness. It is into his ears are whispered the sad revelations of the frailties and miseries of man, and to his sympathies are appeals made from well nigh broken hearts that he will interpose his skill to prevent disease and death falling unmercifully upon the innocent and helpless wife and children. The philosopher knows nothing whatsoever upon any such question as this. The solution of such a question must be made by appeals to medical men and the records of scientific medicine. It is presumptuous, and a criminal wrong to society for a man like Herbert Spencer to write as he has done upon this subject, and that writing founded upon his imagination and a superficial examination into the history and facts of the subject. Had Mr. Spencer's statements been made only to the profession of medicine, mankind would not have been so grievously endangered by them, for physicians would have placed a proper estimate upon them. Presented, as they are, to the non-medical reader, they are

fraught with most calamitous results should they remain unchallenged, unrefuted. Would that this attempt to refute the statements of Mr. Spencer had been made by an abler pen than mine. As no such effort is known to me, I have, after much hesitation, determined to review his statements; to call for professional examination of this important subject, and to appeal to physicians all over the land to make continued efforts to preserve the spotless purity of the home circle by protecting unsuspecting, innocent, lovely women from contamination by syphilitic husbands.

EXPLANATION OF THE PATHOLOGY AND THERAPEUTICS OF THE DISEASES OF THE NERVE CENTRES, ESPECIALLY EPILEPSY.

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Preliminary to a consideration of the pathology and therapeutics of the nervous system, the general results of former investigations as to the structure and functions of its different elements must be recognized. The great cardinal distinction of the cerebro-spinal and ganglionic ramifications with the delicate interlacing in their minute peripheral branches, co-operate for developing that nerve power which is transmitted to all the organs of the body.

The properties of the motory and sensory spinal nerves, the reflex functions of the spinal cord, the organic developments of the great sympathetic, and their co-ordination in harmonizing all the functions of the physical organism, afford the chief characteristics of the general nervous system.

Physiologists are for the most part agreed as to the main doctrines touching the important modifications impressed upon the organization by this complex force of the different kinds of nerves, but investigation is still progressing in regard to the various capacities of the subdivisions of the nervous system. A rational and scientific explanation of the mutual dependence of the principal organs has been attained, and a clear insight as to the performance of most of the organic functions has been gained by the carefully conducted experiments of practical physiologists, while advances have been made in vital phenomena by clinical observation. The conflicting views of those who have made

the most thorough investigations in experimental physiology during these latter years, render the results of clinical observation important in the relations of the nervous system to the dependent organism, and to the performance of the various functions concerned in the harmonious development of the whole frame. While one set of experimenters recognize the medulla oblongata and spinal cord as the chief sources of "the nerve influence in the tissues," another deduces from investigations in the physiological laboratory that many phenomena believed to be produced by the agency of the nervous system, may be really independent of it. It is held by the latter that "the vaso-motor nerves exert their influence profound and extensive, but the tissue elements which they control have also a power of independent action."

The excito-secretory function of the nervous system which plays so important a part in the nutrition of the body, and its counterpart, that presides over the excretory processes of the different organs, are to some extent independent of the direct operation of the general nervous system, yet so associated with the distribution of the ganglionic nerves as to receive a modification from this source. There is a delicate interchange of nerve power between the spinal and organic ramifications to the internal organs, which co-operates with the peripheral distribution of nerve fibrils in the development of vital force. This harmonious result ensues from the operation of the nerve-centres, and as the current which flows along the electric wire requires that the battery shall be in good order, so it is requisite that their energy shall be preserved.

The experiments of a distinguished physiologist have recently confirmed the principle inculcated as to the role of the peripheral nerves, by presenting the phenomena of inhibition in remote parts, from the local application of

chloroform. It is thus shown that "a remote action takes place through the skin on the nervous system," and it is claimed that "it is the first occasion in which the loss of muscular excitability resulting from a remote irritation has been observed."

It is clear that the reflex manifestations of the nervous system do not suffice to explain the various sympathies and modifications which operate between the different regions of the body. There is a very peculiar potency in the intricate association of the various parts of the human organization, which must be recognized for the solution of the physiological problem; and demands consideration in the study of the reciprocal disturbances of the organs with their pathological sequences, while it cannot be overlooked in the application of remedies.

Facts observed in treating a great variety of diseases have confirmed the results of experiment as to the great importance to be attached to this element of energy on the part of the nervous development, which connects the surface with the interior structure. In deducing from such facts, the grand motor-power which is operative in the mutual relations of the dependent parts of the organization, there is afforded a satisfactory explanation of the objective developments of physiology and pathology, and the subjective capacity for therapeutic applications. For a satisfactory comprehension of the correlation of the nerves and capillaries and their relations to the nerve centres, we must look to a property of the nervous system, which may be defined as the excito-dynamic element, and through their mutual dependence and reciprocal reaction the whole train of local and general disturbances may be explained.

I am thoroughly convinced of the intimate relations of the capillary and nerve fibrils with the vital functions, and

it strikes me forcibly that sufficient stress has not been placed upon these so called sympathies in attempting to fathom the depths of pathological diagnosis. In consideration of the data afforded by the arrangement of the minute blood-vessels and their dependence upon the almost infinitesimal ramifications of fibrillas of nerves from the different systems, it must be inferred that the condition of the tissues supplied by them is subject to modification from the general innervation. Such being the case, and it being ascertained that a letting-down of the nervous energy uniformly precedes the appearance of disease, it is fair to attribute this local condition to the effect of the impaired nerve-power upon the capillaries. It has been established by the investigation of recent observers that the arrest of the function of contractility in the capillaries is the constant attendant of congestion, which is the immediate precursor of inflammation.

We know by experiment that the division of that branch of the sympathetic which extends to any part, thus inducing a paralysis of its function in that part, leads to dilatation and consequent engorgement of the respective capillaries.

We are therefore prepared to infer that, from some unknown cause, the nervous distribution of the regions involved loses its vitality, or has it materially impaired, so that by lack of the tonifying influence upon the small blood-vessels, and especially the capillaries, there is a stasis of the blood, and eventually a disorganization in the cellular tissues, implicating the adjacent textures. To appreciate what is passing in the deeper-seated parts, and what alterations must ensue for the termination in suppuration, it must be considered that there is an arrest of the free circulation of blood in the subjacent structure, dependent, doubtless, upon a paralysis of the vital functions of the minute nerve fibrils that accompany the capillaries of these textures

The desideratum for a proper study of the disorders of the nervous system is an adequate knowledge of the physiology of the same, or in other words, a true conception of the normal performance of its functions.

In the healthy physical organization all the mutually dependent parts harmonize in their execution of the offices suited to the respective organs of the body; and the nerve power that is requisite for respiration, digestion, and assimilation differs to some extent in quality, but there is good reason to believe that the element of quantity or degree has much to do in the regular action of the various divisions and sub-divisions of the physical framework that constitutes the human body.

The capacity for movement, the sensibility to pain, the power of appropriating nutriment, the endurance of active exercise which causes wear and tear of the vital force, all depend upon special supplies of energy through the different attributes of the nervous system; and our inquiry as to the pathology and therapeutics of the various departments, involves a comprehension of the operation on the part of the nerves as a whole and in detail.

It is evident that the nerve centres are essential for the propagation of any impression upon the superficial distribution of nerves, through a connection with these and with the parts to which the influence is extended. In the experiments of Brown-Sequard demonstrating the arrest of function by local anæsthetics, this intervention of nerve centres is illustrated: "It is the phrenic nerve and half of the diaphragm of the opposite side to that of the application of the chloroform that thus becomes inhibited and paralyzed; not only as regards their action, which depends on nerve cells, but also their property of tissue—the muscular excitability having disappeared." The great reach

of this minute and intimate relation of the capillaries and nerve fibres, through the nerve centres, in the "arrest of the exchanges" is shown in the diversified forms of disturbance at remote points from that upon which the primary impression is made, and from which by its nervous connection the inhibitory effect is transmitted to the tissues.

There is no doubt that medicinal agents in many cases enter the circulation and produce their appropriate effects upon different organs by absolute contact with the secretory apparatus, yet there are numerous instances in which the result does not depend upon such a circuitous route for the development of their action. If it can be shown that effects upon the vital functions ensue from external impressions, independent of the absorption of any substance, it is clear that such results may be anticipated in similar applications under like circumstances. All the class of revulsions, including the sudden impression of extreme heat and cold, upon circumscribed portions of the cutaneous surface, depend doubtless upon the reflex property of the nervous system for their effect.

This sudden energy cannot depend upon any other link of association than the interchange effected by the action and reaction of the nerves and nerve centres. While the circulation of the blood is a pre requisite to any exhibition of power on the part of the nerves, no extension of the impression in this case depends upon the veins or the arteries which respectively convey the blood from and to the surface with which the agent is brought into contact.

It is held by the advocates of sanguiniferous communication that in the cases which indicate an influence of medication upon the nervous system, the effect is developed solely through the transmission of the medicinal agent to the nerve centres by the blood. But while the nerve cen

tres are essential to the due influence of agents upon the nervous system, this does not in any way militate against the view that impressions are transmitted through a nervous connection with the peripheral branches. The close sympathy of the capillary plexus with the internal ganglionic system, substantiates their reciprocal action and reaction in the manifestation of the effects of external impressions upon the body.

The vaso-motor system of nerves is an outgrowth of the interlacing of the cerebro-spinal and great sympathetic nerves, and presides more especially over the contractility of the coats of the blood vessels. Hence it occurs that in cases of paralysis, implicating the motor and sensory branches of the spinal nerves, the circulation of the blood is not materially affected. But when the vital force becomes involved through the organic nervous system, it is found that the flow of the blood is impeded or accelerated from depressing or stimulating agencies, which operate upon the ganglionic nerve-centres, and whose influence is propagated to the vaso-moter nerves.

The co-ordination of the peripheral distribution of the nerves with the nerve-centres, pertaining to animal or organic functions, is a pre-requisite for health; and every departure from this, whether external or internal, becomes disease. Let the source of such impressions be what it may, we are concerned only with the effects as developed in special derangements, and as the escar resulting from a coal of fire or a portion of frozen solidified carbonic acid gas, placed upon the skin, presents very similar characteristics, so the peculiar consequences of impressions on the nervous system, from apparently opposite influences, have a striking resemblance. A neuralgia, for instance, may be induced by very different causes, yet still it is the same disorder

of the nerve affected, and requires like treatment as if from a common origin. Not that all the entire class of neuralgias are identical in their nature or degree, and hence amenable to the same remedy, for there are numerous instances of departure from this uniformity, yet the fact holds good, that like effects frequently ensue from unlike causes, which demand like treatment in the correction of the disordered innervation. As a counterpart to this it is observed that similar causes produce very different effects upon the nervous system, so that according to the particular region that sustains the impression the consequences vary widely. What are ordinarily considered as special diseases, developed in the several organs, are generally to be attributed to a primary alteration in the nervous supply to the respective parts, and may be a legitimate sequel from a remote origin operating diversely in the parts.

It is generally held that some untoward impression from without induces changes within the body which lead to the functional derangements primarily, and that the organic disturbance ensues in consequence of the perverted action.

There is such an intimate relation between the capillary vessels and minute nerve fibrils of the skin and the internal viscera by the action of the excito-dynamic function of the nervous system that any irregular local impression upon a particular portion of the cutaneous investment of the body is soon brought to bear upon some corresponding internal organ, and induces a proportional derangement subsequently of the general system. A want of the proper equilibrium in the distribution of nervous energy to different portions of the organization is the first link in the chain of abnormality. Then local capillary engorgements ensue as secondary phenomena, while visceral congestions lead to excitation and irritation of the internal organs. This influence

of the vitiated action extends ultimately to remote parts supplied with fibrous and serous tissues, not as a constituent but as a result of the disease.

Under such conditions the "proteinous alimentary principles" become involved in the perturbation, and hence the development of fever is accompanied by the transforming of the albuminous and gelatinous elements into fibrine.

The intimate association of the minute distribution of the nerve fibrils and capillaries with the primordial elements of the tissues favors the idea that fibrinous depositions may be eliminated through agents operating through the nervous system, and the supposed alterative effects of medicines may ensue from nerve agency.

When we come to understand precisely the nature of the influence prevailing over the several organs through the distribution of nerves to the same, as a preliminary element of disorder in their functions, a great advance may be expected in the prophylactic regulations which constitute hygienic laws. A due consideration of the minute ramifications of the multifarious kinds of nerve fibres which permeate the viscera, and the various tissues of the organization, throws much light upon the pathology of all those diseases springing from changes in the nerve element of the several organs of the body. It is evident that any deterioration of the innervation must pave the way to other disturbances, and the incipient stages of most diseases indicate a primordial atony of the nervous branches distributed to the affected part. In other words the trouble comes through the nervous system, and consequently a corrective should be addressed to the nervous system. A vast array of facts can be brought to illustrate the preliminary depression of nerve-power as the primary element of trouble in the diversified forms of disease, and the clinical experiences of all

practitioners furnish sufficient data upon which to base the conclusion that remedies applied at this stage, solely with reference to their control over the nervous system, suffice to arrest the development of further disorder in the organization. Should the train of sequences not be cut short by such means, it then becomes necessary to adopt measures of a different order and to combat structural changes resulting from the primary nerve-lesion.

The subcutaneous areolar tissue is so intimately connected with the internal organs by the correlation of the capillaries and nerve fibrilles, as to afford a most important medium for the introduction of medicinal agents. The influence of medication is manifested more promptly by this channel, whether by absorption or by direct transmission of the nerves than is practicable through the stomach, and this line of approach to the citadel of life affords us abundant evidence of the telegraphic connection of the great nerve centres with the cutaneous outposts.

An exact understanding of the intimate relations of the nerve fibres to the capillaries and their joint influence upon the nerve centres through which the various organs become affected, implies a link of communication between the centripetal and centrifugal forces of the animal economy. This consists in a propagation of nerve power in some manner independent of the brain and spinal marrow, to which a clue is afforded by the experiments on the "arrest of the exchanges"; and the inhibition of remote parts by the local application of an anæsthetic goes very far towards demonstrating an independent action of the peripheral plexus of nerves associated with the capillaries. There is a general development of energy coexistent with the distribution of the nerve fibrils and the capillaries to the surface of the body, that is extended by a nervous link to the mucous and

serous membranes and to other tisues of the organism, and this can only be through the intervention of the ganglionic nerve centres. The question for elucidation is no longer as to the fact of this reciprocal relatien of parts, but we have to consider the true sphere of action and reaction between these various elements growing out of their special vital capacities. It is requisite that pathologists shall define the precise channel of communication through the nervous ramifications by which impressions are conveyed from one part to another, not in the line of the ordinarily recognized tract of nerves, when the ultimate point reached is shown clearly by their effects. A proper explanation of the physiological relation of the nerve fibrils and capillaries to the normal and regular performance of the functions of the different organs, must conduce to a better understanding of their pathological conditions, and the great desideratum is the establishment of the chain of connection through the nerve centres. The constant operation of impressions through a link of communication, independent of the afferent and and efferent spinal nerves, is a matter of clinical observation and leads us to infer the existence of these distinct nerves or interlacing of the ganglionic branches connecting the outer and inner parts of the body.

It is a well known fact that in hemiplegia or in paraplegia involving the motory and sensory branches distributed to the affected parts, that the circulation is maintained with the temperature in like manner as in the sound members, demonstrating their independence of the cerebro-spinal nerves; and while the vaso-motor system presides over these functions to a large extent, there is observed in lesions of the spinal marrow, resulting in complete paralysis of the lower extremities, at times an elevation of the temperature above the heat of other parts of the body, and a capacity to

resist an exposure to the lower temperature of the surrounding atmosphere, which leads to the inference that a power of developing extra heat exists in those parts deprived of the influence of the cerebro-spinal system of nerves. I have had an opportunity of noting this result in a case of fracture of the spinal column, when the hands became chilled by the exposure, and the lower extremities maintained heat.

On the other hand, as a counterpart to this, it is often observed, that the temperature of the extremities becomes much reduced below that of the body under the operation of vital depression, or causes operating on and through the organic nerves, while sensibility and motion in these parts remain unimpaired. This occurs in the cold stage of intermittents, and in some nervous disorders, in a very striking degree, but is especially noticeable in cholera and in colliquative diarrhœa attended with great prostration.

In view of these phenomena it is clear that a dynamic element exists in the nervous system of which physiologist have not taken any special notice, and this property of the ganglionic nerve-centres I would designate as excito-dynamic. It is something quite distinct from anything heretofore attributed to any division of the nervous system, and gives us a clue to the explanation of the pathology and therapeutics of the nervous system.

I would advert to the tonic muscular contraction of tetanus as an indication of augmented action on the part of the nerves or an increase of the excito-dynamic element, whereas the want of co-ordination manifested in St. Vitus' dance or chorea, illustrates a deficient influx of nerve power, and the means specially adapted to their relief, respectively, are of the sedative and tonic order. If the elevation and depression of vital manifestations originating from the greater or less nerve power developed in the system be duly con-

sidered, a correct appreciation may be made of the physiological status of the organism, and a proper basis of the pathological condition will be furnished with a true guide to therepeutics.

The transmission of cutaneous modifications to the internal organs becomes in many instances a great source of disorder to the animal economy. The sympathy of one part with another in the transfer of superficial impressions to the interior organs depends upon the distribution of the peripheral nerves, and their relations to the nerve centres, which act as relay stations to disseminate the current in various directions. Thus we have a rational and scientific explanation of the different results upon which depend the various manifestations in health and disease. The local impression modifies the constituent elements of the cutaneous surface, and through the connection of the outer and inner structures by the general nervous communication a vital alteration is effected upon the internal organs.

It is a fair inference, therefore, that the immediate transmission of the hurtful influence from the stings of insects and the bites of venomous serpents does not depend upon the comparatively slow process of absorption for propagation through the circulation of the blood. A primary impression made through the capillaries upon the minute ramifications of the nerves is probably extended to the nerve centres and thence propagated, by the joint operation of the spinal and ganglionic nerves, to the whole system. But whatever may be the route of poisons that come in contact with the network of nerves and capillaries in the areolar tissue, their peculiar effects are conveyed very promptly to the other tissues and to the different vital organs, developing remarkable modifications in all the organic elements of the body.

The same speedy manifestation of their effects is noted from the introduction of medicinal agents beneath the cuticle by injections or otherwise. Instead of any local irritation, as might be anticipated from the topical application of medicinal agents, there is soon manifested a general influence upon the organization, corresponding to the special property of the article employed. This action is doubtless due in part to the conduction of the medication by the multitudinous currents setting out from the point of introduction, but should be attributed chiefly to the dynamic property of the nerves supplying the part. The effect of an inert substance, such as distilled water, upon the nervous system, even affording almost immediate relief to local pain, shows a very delicate susceptibility of the physical organism to the action of hypodermic applications, and their marked influence depends upon the direct communication of the nerve fibrils and capillaries with the nerve centres of the ganglionic and spinal systems. The notable effects of the use of dry cups, sinapism and blisters upon the surface, are likewise due to the intimate relations established through this channel of communication with the internal parts of the body. The mutual dependence of the superficial and deep-seated structure upon a dynamic element of the nervous system is very evident in some conditions of the organism, manifesting an insusceptibility to the action of irritants upon the skin. Yet when a change is effected in the vital force of the general system, normal sensibility returns to the surface, and excitement is developed in the parts where sinapism and blister had produced no effect previously. It is this element of nerve power which suffers detriment in that vital failure called shock that results from severe injuries, and there must be a partial paralysis of that property of the nervous system to which I have applied the term

excito-dynamic, so that it becomes insensible to the use of stimulants for a longer or shorter period after such impression.

This underlying impairment of the vital forces resulting from concussion of the nerve centres, should always be suspected when marked prostration follows operations or extensive wounds; and the deep-seated injury to the nervous system is often such as to endanger life. The nerve element involved in this condition is referable to the organic system, and is quite distinct from any of the ordinary nervous depressions which accompany mental perturbation or casual physical derangement. It is the excito-dynamic faculty that becomes implicated, and affords quite a sufficient contra-indication to any demand upon the vital energy by depletions or other depressing agencies.

Practitioners are familiar with a great variety of data illustrating the modifications of the organisms through this channel, and the nature of the special cause is propagated in an extraordinary manner for the development of specific diseases. As transient impressions leave temporary derangement, so it is found that continued application of certain agents leads to permanent results upon the system. The absorption of a virus from contact with the mucous membranes, or by insertion beneath the cuticle, develops subsequently the specific constitutional effects of the special contamination. The direct influence upon the part is not immediately perceived, but in the course of time, according to the period of incubation, an inflammation ensues locally, and from this point of irritation, in the course of another definite period, there is transmitted a peculiar disorder to the general organization, which indicates that the poison has been in operation through a definite channel to bring about this result; and thus demonstrating the reciprocal

relations between the surface and interior structure of the body.

The final result of all such impressions is not a manifestation of reflex action emanating from the excito motor nerve centres, nor is it an exhibition of the property of the excito-secretory nerves, neither can it be traced to the vaso-motor element of the nervous system, and hence it must be referred to a nerve function distinct from these recognized attributes of the nervous system. The effect is due to a peculiar influence propagated to the organization by the excito-dynamic function of the nervous system, which operates through a definite association of the ganglionic and spinal nerves with the nerve centres, and depends upon the correlation of the nerve fibrils and capillaries with the central nervous system. It is a reasonable inference from the facts observed that structural disorders arise from a molecular change in the tissues, which is to be corrected by a generalization of therapeutic measures, and that the development of so-called nervous diseases depends to a large extent, if not entirely, upon the augmented or diminished energy of the nerve centres, calling for the use of remedies chiefly of a stimulant or sedative nature. A correct pathology of the nervous system must be based upon an adequate conception of the mode in which the efficient cause of trouble brings about the consequent alteration in the functions of the various organs, so that measures may be resorted to for correcting such disturbances by understanding properly through what channels and by what agents salutary modifications are produced upon the physical organism.

Important revelations as to the disorders of these nerve centres are afforded by very simple processes of exploration. The morbific impressions upon the nerve centres are made to a very large extent upon the network of capillaries and

nerve fibrils which enter into the composition of the cutaneous investment of the body, as well as into the structure of the mucous and serous membranes lining the various cavities or covering the various organs. They constitute the peripheral excito dynamic element of the nervous system; and when other indications may be doubtful, these manifestations of the capillary system may be relied upon for a decision. It is the outward indication of the inner working of the organism, dependent upon the correlation of the peripheral nerves and capillaries with the great nerve centres of the cerebro spinal and ganglionic nerves. The ganglionic element which has been demonstrated to exist in the plexus of nerve-fibrils that enter into the structure of the skin and other investing membranes, has doubtless an independent property in its functions corresponding in some measure to the separate action of the nerve centres in the interior organization. Facts warrant the inference, that a chemico-vital process, by the relations of these minute peripheral ganglia with the capillary blood vessels, is developed locally, and is manifested without the intervention of the general cerebro-spinal nervous system. Such being the case, it can readily be understood how impressions made upon the peripheral branches of the nerves may affect the performance of the functions of the various internal organs through the ganglionic nervous system. As the counterpart of this independent action in the superficial organism, it may be comprehended that the modification of the internal organization is shown in the varying contractility of the capillaries.

The tonicity of the peripheral nerves and capillaries is a fair index of the state of the internal nerve centres and according to the time required for the ordinary color of the skin to be completely restored to the spot upon which pres-

sure is made temporarily by the end of the finger, the vital energy of the organization may be proximately determined. The local compression expresses the blood for the time being from the capillaries, thus leaving this spot whiter than the florid surrounding surface. If the walls of the capillary tubes are relaxed from the want of tone in the minute branches of the nerves, constituting a state of congestion dependent upon debility, the return of the blood to the capillaries will of course be retarded. Should there exist, however, a super-excitation in the nerve power, the return of the blood should be quicker and the color will be restored more promptly. All the shades between stasis of the capillary circulation and the acceleration which characterizes fever, with its increased heat and florid hue of the surface, may be detected by digipressure and dynamoscopy. When these processes of examination are used with discrimination, we have a guide to the state of the forces of the system.

It has been verified by repeated observation that the intensity or feebleness of these sounds in the superficial parts of human organism depends upon an inflammatory or excited state as contra-distinguished from an anæmic or a depressed condition of the general system, and that they become thus a reliable means of determining the vital energy of the organization.

It has been further ascertained that the prompt or slow return of color to a spot pressed upon for a short time on any part of the surface, results from the vigor or weakness of the capillary circulation, affording in this way an indication of the force or debility of the nerve power propagated from the nerve-centres to the vital organism.

While means have been devised for determining the temperature of the body, the force of the blood current, and

even the intensity of muscular contraction, the author of this paper is not aware of any device other than the dynamoscope measuring the vital force of the nervous system, and he claims that by these simple modes of procedure a true criterion is presented for the use of stimulants or sedatives, that operate through the nerve-centres upon the general organization of the physical frame.

The dynamoscope has been overlooked in the grand march of progress in the diagnostic proceedings of medical practitioners, and the simple expedient of pressure with the point of a finger temporarily upon the surface has not been appreciated.

The propagation of nerve power as manifested in voluntary movements and in the reception of impressions from without, depends upon the motor and sensory branches of the anterior and posterior portions of the cerebro spinal system of nerves. The relation of these nerve-fibres in the different segments of the spinal cord, with their association and co-ordination in the medulla oblongata supply the conditions for the nice and varied developments of the reflex action of the excito motor system.

But the phenomena or exhibitions of the reflex functions of the spinal cord cannot be identified with the manifestations of the reciprocal relations of the capillary plexus and the ganglionic nerves. The sensations with voluntary and reflex movements are not implicated in the close relations and mutual dependencies of the organic system of nerves and the network of nerve fibres and ganglia intermixed with the capillaries. It is to this intricate association of parts and functions that I wish to direct attention as affording an explanation of the effects of remedies, poisons and various other agencies, which operate through the nervous system upon the physical organization.

The recognized reciprocity between the external and internal or peripheral and central nervous developments indicates an intimate link of connection, and the legitimate deductions from clinical observation have been fully confirmed by the facts of experimental inquiry, so that a satisfactory explanation is afforded of the source of disorder and the means of relief in diseases involving the nerve centres.

However heterodoxical it may appear, general derangement may have local effects; and circumscribed lesions may lead to general results, which demand corresponding means of treatment by topical and constitutional measures.

The measures to be adopted for the relief of affections involving the nervous system, whether included in the class of nervous diseases or otherwise recognized in nosology, should operate upon the excito-dynamic nerve-centres, and may be applied internally so as to be conveyed into the system by absorption, or externally so as to produce a revulsive effect, or again in the form of subcutaneous injections so as to influence the peripheral distribution of nerves, or by inhalation.

The potency of the cold shower bath, electricity, and sudden mental impressions, in effecting important modifications in some forms of nervous diseases is generally recognized, and the recent triumphs of hypodermic applications, not only for the relief of pain but for the correction of molecular derangements, opens up the way for a more extended and systematic use of remedies addressed especially to restoring the equilibrium of nerve power. A very recent application of the anæsthetic inhalations for their remedial effects, independent of rendering the subjects insensible to the pain of surgical operations, affords a clue to the mode of reaching this source of trouble, and a special use of nitrite of amyl for the relaxation of the irregular contractions of

the womb, is among the most important results attained in any department of medical practice.

It is not within the sphere of the present undertaking to enter into the details of treatment for different disorders of the nervous system, and I would simply inculcate the general principle which should guide the practitioner in addressing his remedies to the relief of the pathological states of the nerve centres, so as to place nervous therapeutics on a trustworthy basis. The periodical and irregular exhibitions of nervous disturbance involve the most intricate etiological conditions in the history of the pathology of this class of diseases. Why the cause should be operative at one time and not manifested at another, is only capable of explanation upon the basis of an accumulation of energy which leads as it were to an explosion, with a capacity of reproduction at certain intervals or at indefinite and irregular periods. A consideration of the periodicity of intermittents, though not nosologically in the class of nervous diseases, satisfies me that a peculiar capacity of the nervous system renders latent the efficient cause of trouble, until its constituent elements shall accumulate to the extent of developing a paroxysm or rigor, and can only be accounted for by the changes in the dynamic attribute of the nerve centres.

The same holds in regard to epilepsy, and the calm which is observed between the convulsions is not in any sense an absence of the disturbing cause, but an occasion for its gradual development until it shall have reached a force that breaks forth in the paroxysm which is *sui generis*, and partakes in the same subject for the most part of similar disturbance in each repetition.

Some cases recur with considerable regularity in the intervals, while others observe no fixed period, but a singular characteristic is that individuals are found that are only at-

tacked at night, giving additional confirmation to the doctrine of the accumulation and explosion being favored by certain circumstances in the given case. The charge becoming completed there is a forcible eruption of the excito-dynamic energy of the nerve centres.

The measures appropriate for the treatment of epilepsy demand special consideration, and if it be possible to free the therapeutics of this graver malady of the empiricism which has marked all the curative applications up to the present time, it will be an advance of no mean importance. The vague notions of remedies for epilepsy which have taken possession of the minds of all classes have their origin in the utter uncertainty as to the nature of the affection and ignorance of the exact location of the disturbance.

Pathologists have, for the most part, referred the seat of disease to the brain, and that this organ is involved in the disorder there can be no doubt, yet the effect should not be confounded with the cause, in the derangements of the nervous system, when different portions of it are implicated, as in the general convulsions which are a prominent factor of this disease. It is true that congenital cases may have their origin in some cerebral defect, as other result from injuries to that organ, but by far the greater number of cases of epilepsy spring from some remote irritation which is propagated through the nervous system to the brain, and thence extends its morbific emanations through the cerebro-spinal nerves to the general organization. In the instances of remote local affections involving the peripheral nerves and thus developing epilepsy, it is not correct to locate the seat of the disease in the brain, and the rare cases of amputation of such parts proving a radical cure of the epilepsy, demonstrate conclusively that the seat of the disease is not invariably in the brain, and hence it should not be recog-

nized as a disease of this organ. Autopsic investigation "shows that it is not connected with any peculiar organic derangement of the brain," and experiments upon living animals lead to the conviction of some that "the seat of the disease is not in the cerebral lobes, but in the medulla oblongata, pons varolii or the upper part of the spinal cord, and that the convulsion is a reflex action of these centres provoked by excitation from without them." The epileptic aura tends to favor the peripheral origin in some cases of epilepsy. "When the sensation reaches the head or the epigastrium, if this lie in its route, there is an immediate loss of consciousness and the patient remembers no more. At the moment of falling he is seized with general convulsions, and the duration of the paroxysm varies from a few moments to many hours." These violent muscular perturbations are only the commotions of the waves under the disturbing force of the winds, which come from the tempest in the nervous system, and soon subside when the cyclone has exhausted itself, leaving the body weak and the mind stupefied for a considerable period.

With the lights of physiological and pathological experiments as to the mutual reactions of the different departments of the nervous distribution and reciprocal influence of the peripheral nerves and internal nerve centres, I am well assured that the seat of epilepsy pertains to the excito-dynamic element of the nervous system, and should not be referred directly either to the brain or the spinal cord as its origin. The multiplicity of the causes which produce this disturbance confirms this conviction; and occasional relief afforded by correcting the trouble which has been the source of the convulsions, serves to rid this position of the doubts that encircle other theories of the nature of epilepsy. The discovery of any sources of irritation is of paramount

importance, and by correcting the emanations from these to the nerve centres, there is a good prospect of effecting a cure of the disease.

The doctrine of inhibition through the "arrest of the exchanges," gives the real clue to its therapeutics by the various agents addressed to the excito-dynamic nerves.

It was incontrovertibly established long since that "an influence proceeds from some external point in special relation with the nervous centre, exciting the epileptic paroxysm, even though not sensible to the patient," and the recent developments from the local applications of chloroform upon the parts corresponding to the distribution of nerves dependent upon the surface to which the anæsthetic has been applied, or in correlation with the same, affords a guarantee for controlling the excitability of the nerves and contractility of muscles implicated in epilepsy.

"The existence of such spots may be known by the production of a fit by pressure or by means of strong galvanic excitation, or by cold, or by the application of a sponge wet with hot water, and these measures may be employed in searching for them in various parts of the body."

Inpependent of all local applications, and subsequent to the use of remedies for the correction of the special causes of epilepsy, a general treatment addressed to the nervous system is indicated, and for this object agents should be employed that may operate as alterants and tonics to corroborate the vital forces. My personal observation warrants the recommendation of the internal use of the spirits of turpentine uninterruptedly until some of its specific effects as an irritant of the mucous membranes or stranguary, may be presented. After this, strychnine in doses of one-fiftieth of a grain three or four times a day, with a gradual increase until one-sixteenth of a grain is reached, should be main-

tained for at least one month, and for a longer period, in cases of long standing. The cold shower bath in connection with this latter remedy has been resorted to advantageously; and induced currents of electricity have proved useful. The entire armory of the materia medica becomes at last only different steps in attaining the end of correcting the deviation of the nerve centres from the normal performance of their functions. All the emetics, diaphoretics, purgatives, etc., which produce their separate and appropriate influences upon distinct divisions of the complex whole, tend at last to bring about an equilibrium in the action of the various parts of the system, and thus by restoring tone to the several functions, establish the normality of the nerve centres. The nerve force is the *sine qua non* of all vital forces, and it must be the prime consideration of any therapeutic proceeding to reach ultimately the correction of all derangements of the nerve centres.

The fountain head of energy for all the functions lies in the nerve centres; and by controlling the emanations from this source of power the vital forces will be propagated with regularity and uniformity to all the remote parts of the physical organization, and it is to this we must look for the cure of diseases.

The means, then, to be adopted for averting injurious impressions upon the nerve centres, and the measures to be used for the correction of their derangements, make up the whole prophylactic combination of hygiene, and include all therapeutic agency in the treatment of diseases, let the details be varied as they may. Rigid clinical observation should reveal the source of the disturbances in the physical organization, and the proper means of correcting them by regimen and medication.

NOTE.—In view of the delay in publication, and of the circumstances connected with this paper, it is proper to state that the article was written more than two years ago, to be submitted to the Imperial Academy of Brussels, which offered a prize on this subject. But upon being sent to Dr. Wilson, the American Consul at that place, with instructions to return it, if essays in the English language were not received for the competition, it was remitted by him with a note informing me that articles in English were not accepted for consideration; and though it failed to accomplish the aim of its preparation, it was hoped that my labor would be utilized by laying the paper before the Medical Association of Georgia.

It is due to the history of developments connected with the views presented in regard to epilepsy, to state that I had not seen or heard anything respecting the theory of Hughlings Jackson when the paper was presented to the Association, and hence no reference was made to the similarity of our views and the correspondence in our solutions of the intricate problem of the causation of this intermittent nervous disease.

Even now I have only received a statement at second hand through Gowers, as reported by Dr. Floyd S. Crego, in the Buffalo Medical and Surgical Journal of July, 1884. This theory holds that the phenomena of epilepsy are all explained by a discharging lesion of the cells of the gray matter, and that the disease affects the motor centres, and does not often have its primary seat in the medulla. "The nerve cells are likened to so many Leyden jars which generate the electricity. Thus the explosion is due to a sudden diminution of resistance by which the pent-up nerve force is released, thus causing the epileptic phenomena."

The views of experimental physiologists as to the functions of the different portions of the nervous system have been materially modified by the recent experiments of Mendelssohn upon frogs, demonstrating that when the anterior columns of the spinal cord are irritated, "the motion ensuing in the extremities made its appearance far more quickly than was the case when he irritated the posterior columns."

It is a recognized fact, that motion induced by irritation of the posterior columns belongs to the reflex order; and motion being produced more promptly in the muscles of the extremities by irritation of the anterior columns than from that of the posterior columns, proves conclusively the direct excitability of the former, so that this important point may be considered as established.

A dynamic element is proved to exist in the direct operation of the nerve power, in its normal and abnormal state, throughout the organism and those interested in understanding the excito-dynamic property of the

nervous system as related to the great nerve centres, are referred to the results of these experiments.

It has been of late a refuge for all who found any difficulty in locating a nervous disorder, to attribute the disturbance to some reflex irritation, and it is not only Dr. Beard that makes this mantle cover a multitude of sins which lie at the door of excitation in a direct channel of the nerve centres, but numerous writers of more fame as neurologists have fallen into the same error. But upon the principle of exclusion we must eventually eliminate the theories of disease which are based upon misconceptions of primordial and elementary disturbances; and by investigating not only the physiological and pathological modifications, but the causative influences that are at work for the development of disease, a true explanation of the abnormal phenomena shall be reached. That many derangements, not now included in the neuroses, will be found largely dependent upon fundamental impairment of the nerve power, is almost certain, from the light recently shed upon the intimate relations of the peripheral nerve-fibrils and their ganglionic developments to the capillaries. It is to this link of communication between the various tissues and the internal nerve centres that disorders of a functional nature are due; and doubtless many, if not all the organic changes, may be traced to impressions, primarily upon the minute ramifications of the nerves in such parts. The point made and insisted upon, is, that the sequences in most cases are independent of the recognized reflex functions of the nervous system, and thus demand a solution distinct from that proposed by the authors of the books on the functions of the nerve in health and disease.

This inquiry is based upon observations and investigations extending through many years; inaugurated so long ago as 1855, in a paper upon "a criterion for the use of stimulants," laid before the South Carolina Medical Association. It was further discussed in 1858, through an article on "dynamoscopy" for the American Journal of Medical Science.

In 1860, an essay upon the "correlation of the nerves and capillaries with the internal organs" was presented to the South Carolina Medical Association. In "the outlook of medicine and surgery" which appeared in some numbers of the Atlanta Medical Register during the past year, I referred especially to the nerve agency in diseases.

In the March number of Gaillaird's Journal for the current year, I presented illustrations of "medication through superficial and deep seated tisue," in which the nerve element was prominent. And finally the theory of an excito-dynamic function of the nerves was fully discussed in a series of elaborate propositions, entitled "The unknown factor in the equa-

tion of the nervous system," indicating "the action of medicine on the cure of diseases," just published in the Philadelphia Medical and Surgical Reporter.

Throughout these investigations, I have sought to demonstrate the operation of a definite nerve element, concerned in the development of vital force and its impairment, and giving a solution of the problem of pathology and therapeutics, which is now submitted for consideration.

I trust that intelligent criticism may detect the error, if such exist, in the deductions from facts; or may confirm the inferences, if correct, from a clinical experience of more than a quarter of a century. This appeal to the matured judgment of the profession must lead to a satisfactory decision.

EXTREME AGE, NO CONTRA-INDICATION FOR CATARACT EXTRACTION.

By JAMES M. HULL, M. D., Augusta.

SPECIAL PROFESSOR OF DISEASES OF THE EYE AND THROAT IN THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF GEORGIA, MEDICAL COLLEGE OF GEORGIA, ETC.

During the past two years I have been greatly surprised to learn of the opinion of the masses, that the removal of cataract in very old persons would not be attended with success, not only emanated from the profession but is still entertained by them.

The profession advance two arguments in support of this opinion:

1st. That in old age the vitality is so largely diminished as to render adhesion of the corneal incision difficult, if not impossible.

2d. That the vitreous becomes so fluid as to cause its loss in such quantities as to make phthisis bulbi the probable result of the operation.

I deem it unnecessary to answer the first argument further than to deny its truth, as my experience in a large number of cases, is, that in no instance has there been failure of primary adhesion.

While admitting that in the aged the vitreous does become much more fluid than in younger subjects, its loss in the operation is by no means a necessity; should, however, its loss ensue, no unfavorable result will follow, as it

is readily reproduced. But if suddenly expelled in large quantities the deeper structures of the eye may receive serious aggression, in which event we may have loss of the organ. In short, it may be stated, that the general nutrition is of much less importance than a perfect operation and gentle manipulation.

In looking over my case book I have selected seven cases seriatim, my only care being that they should be over seventy years of age.

Case 1. Mrs. S. W., age seventy. Removed cataract from left eye February 4th, 1883. Recovery normal, with sight sufficient to do all work with perfect comfort, and to read large type. Snellen D. 225.

Case 2. G. B., age 73. Removed cataract from both eyes, May 16th, 1883. Recovery in right eye normal and sight good, in left eye slight iritis and capsular cataract, with vision sufficiently good to find his way about; iritis readily overcome. I would have operated for the capsular cataract in left eye, but that the patient was killed by being thrown from his buggy while out driving, nine or ten weeks after the operation.

Case 3. H. B. age 71. Removed cataract May 19th, 1883, from left eye. In this case I had slight loss of vitreous, but as the deeper structures were not disturbed recovery was good. Patient resumed his occupation 5 weeks after operation.

Case 4. R. E. (col.) 87 years old. This patient has been since her youth a washerwoman, and being still in vigorous health, I removed cataract from right eye June 2, 1883. On the fifth day the patient, seeming weak and impatient, was allowed up, and from that time on, progressed rapidly till dismissed from treatment four weeks afterwards, seeing to go about and enjoy life again.

Case 5. D. L., age 83. Cataract removed from right eye, June 24th, 1883. Recovery good, with vision. Snellen. D. 3.

Case 6. Rev. B. J., age 76 Sept. 4th, 1883, removed cataract from left eye. Recovery normal and sight good.

Case 7. Mrs E. E. age 71. Removed cataract from left eye, Feb. 14th, 1884. Slight iritis retarded the recovery in this case. It yielded, however, readily to the treatment, and the vision is perfect, the patient being able to read fine print and write with ease.

The method of procedure in all these cases is a modification of Von Graefe's operation, from which I have generally seen the happiest results.

The after-treatment, as a rule, is tame and uninteresting.

Should the recitation of these cases remove from the minds of the profession the erroneous opinions under which they have been laboring, and encourage them to send their patients to specialists to be operated upon and thus saved from perpetual blindness, the object of this article will be well accomplished.

JEQUIRITY (ABRUS PRECATORIUS) — ITS USE IN THE TREATMENT OF GRANULAR LIDS, PHLYCTENULAR FORMS OF INFLAMMATION, AND CORNEAL ULCERS.

By ARTHUR G. HOBBS, M.D., Atlanta, Ga.

The profession is indebted to Dr. DeWicker, of Paris, for first bringing this bean (*jequirity*) forward in such a manner as to make its future promising as a remedy in some eye diseases. A little more than one year ago he began experimenting with it in trachoma, and was so well pleased with his results that he narrated them in a Paris journal in May of last year.

Notwithstanding the severity of its action in a few cases, it has been used many times even in this short interval by the oculists of this and other countries.

DeWicker's first experiments were confined to its use in that most intractable disease, trachoma, and his conclusions were as follows, in his own language:

1st. "Incontestably, lotions with the infusion of jequirity seeds cause a purulent ophthalmia of a croupal character, the intensity of which can be regulated by the number of applications and the strength of the solution.

2d. "Incontestably, the cornea runs no risk during the course of the jequiritic ophthalmia.

3d. "Incontestably, jequiritic ophthalmia cures granulations rapidly."

When the infusion is applied to the conjunctiva daily or twice daily for several days, an apparently violent form of

croupous inflammation is brought about, a sero-pus is secreted abundantly, the lids become thickened and swollen, and there is considerable pain as a consequence, a headache and slight fever is complained of, and in some cases even nausea and vomiting. This is somewhat the same condition that supervenes after the introduction of gonorrhœal pus. After a week or ten days the croupous secretion has ceased, the swelling has gone down, and when resolution is complete the granulations have disappeared, or else have become less in size and number.

My experience in its use in trachoma is limited to seven cases. In three I had good success, in three more only partial success, but the seventh was an old case of trachoma in which the granulations were small and red, giving the whole surface of the palpebral conjunction a reddish, "beefy" appearance. In this case the croupal inflammation extended down into the nasal sack through the cunaliculus, which required considerable after treatment, and the granulations were but little affected.

In regard to its use in phlyctenular inflammations, I have had experience thus far in only nine cases, in which I used it alone. In all of these it seemed to act more rapidly and more effectually than mercury in any of its forms as a local treatment. Its use here is not carried to the extent that it is in granular lids; as soon as the croupal secretion begins, its application is ceased, and when resolution follows it is applied again, if necessary.

In two cases of ulceration of the cornea I used jequirity alone, with the idea that I would risk it a day or two at least, but both cases recovered so rapidly that nothing else was used. I have been using the bean in a case of general paunus, a consequence of ophthalmia neonatorum for about four weeks. The infant was entirely blind, now the cornea

of one eye is so much cleared that I am confident much more light reaches the retina.

I have corresponded with fourteen oculists in this country with reference to their use of the bean, nine of whom have used it in their practice from three to eight months and in from five to forty cases each. Eight out of this number unhesitatingly recommend the superinduction of jequiritic ophthalmia, at least as an assistance in the treatment of granulated lids; the ninth did not recommend it because in all the cases in which he tried it a dacryo-cystitis was brought about which required punctal injections for some days. One of the eight—Dr. Eugene Smith, of Detroit—highly recommends its use in all phlyctenular forms of inflammation and in corneal ulcers. Dr. DeWecker first recommended that two beans be macerated in an ounce of water and applied with a soft sponge to the palpebral conjunctiva for several minutes three times a day. I have found that cases are variously susceptible to its action; in one case only did I get its full effects from this weak solution of DeWecker's. In all my other cases I used an infusion of from five to ten beans to the ounce of water, applied once per day to the everted lids with a camel's-hair brush. Owing to the severity of its action in some cases, it is best to apply it only to one eye at a time, and care must be taken that the discharge does not get into the unaffected eye. Separate the agglutinations with a probe, if there be any tendency to symblepharon. After four or five days, when resolution is well established in one eye, the other may be treated likewise.

In the hands of some, jequirity has seemed to fail to exert any curative action whatever upon the granular elements, and some have gone so far as to denounce its use as dangerous, especially in children. It is, of course, too early to

place jequirity in the position in which its merit alone will sustain it, but I think the verdicts so far are greatly in its favor.

NOTE.—Since the April meeting of the Association, a number of articles have appeared in the Archives of Ophthalmology upon this subject, and the verdicts are still more unanimous in its favor, provided the right kind of cases are chosen. The cases of granular lids, in which it has proved most successful, are those old chronic cases that have resisted all other modes of treatment. Again the cases in which it has seemed to prove the least successful are those accompanied by a blennorrhœic discharge. According to these writers we should not use it in corneal ulcers for fear of perforation. A solution of from three to five per cent. is the general strength employed. I will furnish the beans on application, to any one who has an old chronic case and desires to take the responsibilities of a trial of this new remedy.

ANIMAL FERMENTATION.

By J. P. STEVENS, M. D., Macon, Ga.

Probably no subject is attracting more attention in the scientific world, not only in the department of biology but in that of medical science, than fermentation. It concerns with imperative significance not only the prosperity and happiness of social and domestic life, but the well being of the nation. For more than two thousand years, man groped in the darkness of metaphysical speculation, and ignored his powers of observation and research, in making deductions from facts derived from experimental investigations. Dr. Tyndal says: "One of the most remarkable characteristics of the age in which we live is its desire and tendency to connect itself organically with preceding ages—to ascertain how the state of things that now is, came to be what it is. Many years ago, the atmosphere was considered an elementary body; now it is known to be a compound body, divisible into its constituent parts, and in such atomic combinations as best to conserve the healthful condition of the whole animal and vegetable kingdoms. But it is now universally conceded that extraneous organic entities in the form of invisible, almost infinitesimal bodies well defined in structures, movements and functions, are found in countless numbers associated with atmospheric motes, in all climates and in all latitudes. Before this intelligent body, it would be useless for me to consume time in detailing the experiments of Tyndal, whereby he proved that

organic concentrated solutions of animal and vegetable matter were kept indefinitely in purified moteless air without undergoing any chemical change, but soon fell into rottenness when subjected to the influence of ordinary atmospheric air. This fact is granted without discussion by all physiologists and biologists. Now, let us spend a few moments in considering the nature of these conservative as well as destructive agents, in their influence upon the life of man and inferior animals.

First, they are known under the generic term bacteria, which includes numerous sub-divisions characterized by distinctive forms, movements and functions. What position do bacteria occupy in the scale of organized beings? The border land between the animal and vegetable kingdoms in their separate divergence is so indistinct, and they seem, as it were so to run into each other that it is difficult to define the line of separation between them. The main distinctive difference between them appears to be in their elementary constituency. It is true they are for the most part what are called quaternary compounds, composed of oxygen, carbon, hydrogen and nitrogen. In both the fundamental cellular structure is the same, but the ternary compounds, oxygen, hydrogen and carbon, less nitrogen, appear to prevail to a greater degree in vegetables than animals. "Starting from this basis, Robin made numerous attempts to find in liquor ammonia, concentrated, as prepared for use in laboratories, a reagent for corpuscles of a vegetable nature. In effect ammonia dissolves the eggs, the embryos, of all animals, the bodies of all the inferior infusoria, attacks the spermatozoa, etc., whilst it leaves absolutely intact all the varieties of cellulose, and the anatomical reproductive elements of plants, whether it is used cold or boiling" (*Sternberg*). Relative forms and motions would not indicate de-

cisive differentiation from primal origin. Many plants exhibit sensitiveness to external irritation.

The Dioma plant has not only the faculty of catching insects, but of devouring them. Mr. Canby wrote in 1868 that he found that the leaf had the power of dissolving animal matter, and that small pieces of leaf that were fed to it were completely dissolved and absorbed; the leaf opening again with a dry surface and ready for another meal, though with an appetite somewhat jaded. It not only could be surfeited, but it suffered from indigestion; and a meal of cheese disagreed with the leaves so seriously as finally to kill them. It is declared that "concentrated acetic acid which causes all animal tissues to become pale is without action upon bacteria." The result of the discussion upon this subject is that the bacteria belong to the vegetable, and not to the animal, kingdom.

Classification of bacteria, which may be divided into four tribes:

1st. *Spherobacteria*, or spherical bacteria. Genus *Micrococus*.

2d. Microbacteria. Species B. termo, and B. lineola.

3d. Desmobacteria, or B. in short rods, bacillus and vibrio.

4th. Spirobacteria, or B. in spiral filaments, spirillism.

The spherobacteria, micrococcus, seem to be instrumental in the production of certain zymotic diseases, diphtheria, etc. The microbacteria, bacteria termo, in animal putrefaction, and the desmobacteria, or B. in short rods, in the production of septic diseases among man and animals. Bacillus and vibrio; also spirobacteria, spirillum and spirochæta.

It appears, therefore, that the classification of bacteria depends chiefly upon their movements and morphological characteristics. Bilroth demonstrated the existence of certain glistening spherical bodies frequently found in in-

fusions containing bacteria, and called danersporen, or durable spores. He demonstrated that these dansporen form micrococci in their interior, which are set free by the bursting of the envelope, and are then capable of multiplication by fission, or of lengthening into bacteria; also that they are endowed with great vitality, and are not destroyed by freezing, boiling or drying. "He had some which germinated after they had been kept dry for eight years; and whenever he wished to make sure of the destruction of the spores contained in his experimental liquids, he heated them to 392° Fahr." Bacteria themselves are much more easily affected by heat and cold than their spores. Cold benumbs them when subjected to a temperature several degs. below 32, and 140 above zero will kill them if kept for several hours in this temperature. Boiling will destroy them in ten or fifteen minutes.

REPRODUCTION OF THE BACTERIA.

It is well ascertained that bacteria can be multiplied by fission as well as by spores. When the bacterium has attained nearly to double its length, a partition is formed in its central diameter, resulting in the identity of two separate individuals, which themselves reproduce others in the same manner, presenting the appearance of peas in a hull. The multiplication of bacteria by fission is almost beyond comprehension.

"Let us suppose," says Cohn, "that a bacterium divides into two in the space of an hour, then into four at the end of the second hour, then into eight at the end of three hours, in twenty-four hours the number will already amount to more than sixteen millions and a half (16,777,220); at the end of two days this bacterium will have multiplied to the incredible number of 281,500 000,000; at the end of three days it will have furnished forty-seven trillions; at the end of a

week, a number which can only be represented by fifty one figures. In order to render these numbers more comprehensible, let us seek the volume and the weight which may result from the multiplication of a single bacterium. The individuals of the most common species of rod-bacteria present the form of a short cylinder, having the diameter of a thousandth of a millimetre, and in the vicinity of one five hundredth of a millimetre in length. Let us represent to ourselves a cubic measure of a millimetre; this measure would contain, according to what we have just said, 633,000,000 rod-bacteria without leaving any empty space. Now, at the end of twenty-four hours the bacteria coming from a single rod would occupy the fortieth part of a cubic millimetre, but at the end of the following day they would fill a space equal to 442,570 of these cubes, or about half a litre. Let us admit that the space occupied by the sea is equal to two-thirds of the terrestrial surface, and that its mean depth is a mile, the capacity of the ocean will be 928,000,000 cubic miles. The multiplication being continued with the same conditions, the bacteria issuing from a single germ would fill the ocean in five days."

ROLE OF BACTERIA IN FERMENTATION.

Magnin has defined "that a liquid is fermenting whenever modifications occur in its chemical constitution as a result of the nutrition of organized beings." Now let us take a hasty glance at the process of fermentation in vegetable substances. The brewer knows from repeated experiments that to secure definite and reliable results in the manufacture of beer, certain conditions must be complied with. He knows that if his wort is allowed to do its own work the fermentation resulting therefrom would be very unsatisfactory. As there are quite a variety of germs or spores floating in the air, the result of the fermentative process might be

very different from his wishes. To secure definite results, therefore, he mixes a ferment, a certain portion of yeast with his wort, and thereby secures the planting of the seeds of the yeast plant (*torula cerevisæ*), which, from repeated observations, he knows will accomplish desired results in the abundant production of beer; and under certain conditions, that of further exclusion of atmospheric air, will furnish a quality of beer satisfactory to his customers. If, however, air is not excluded by preventive measures, acetous fermentation is substituted for the alcoholic, through the agency of the vinegar plant (*mycoderma aceti*). Uninterrupted access of air will cause the acetous fermentation to pass on to the fermentation of mould, producing a thin, leathery pellicle (mother of vinegar) upon its surface, through the agency of another plant (*fennicillium glaucum*), and the whole mass passes into rottenness. Its combustion still goes on, its oxygen, carbon and hydrogen passing into the air, and nothing but the ash element remains. So in vinous fermentation, Pasteur, by an ingenious experiment, extracted the pure juice of the grape, confined it in pure moteless air, and no fermentation followed. Every close observer has noticed a fine dust on the skin of the grape which, when brushed into water, renders the latter turbid. This dust contains the germs of the torula plant which is employed by the brewer in yeast in the production of beer. The wine-maker, therefore, crushes his grapes whole, not only that he may obtain the juice, but that he may secure the dust which conveys the seeds of the torula plant that successfully accomplishes the fermentative process. It is evident from our knowledge of the process of fermentation that the unobstructed admission of air to this freshly-made wine will cause it to become sour through the depredations of the mycoderma aceti plant. The wine-maker, therefore, bottles his

wine and hermetically seals the stoppers. The fermentation, however, still goes on, and the torula plant cannot live without the presence of oxygen. It, therefore, ingeniously goes to work, decomposes the sugar in the wine and appropriates its oxygen, and the fermentation progresses until the food of the torula is exhausted. Carbonic acid and various aromatic ethers are evolved, which give the peculiar "boquet" so much admired by bibulous wine connoisseurs. It is, therefore, readily comprehended why aged wines are so preferable to those recently manufactured.

Now, as regards animal fermentation, Stimson declares that the presence of bacteria in the liquids and tissues of the body, often affirmed and denied, is now proved beyond question. "Rapid multiplication in the living body is prevented in part by the motion of the blood, and in part by the vital energy of the tissues, which is so vigorous that these plants cannot check it, and therefore obtain the nourishment needed for their growth; but when life has ceased, or when an abnormal condition of the tissues has been brought about by any cause, their rapid growth begins, and we have in the one case, putrefaction; in the other, various pathological changes of more or less importance." Stimson furthermore declares: It is probable that so far as the agency of bacteria is concerned, their role is as follows: "While they have no power in themselves to excite disease (diphtheria, vaccinia, septicæmia, typhoid fever, etc.), they are able to absorb the poison (ferment?) which is capable of producing it, to 'fix' it, as it is termed, and to give it up to any tissue with which they may come in contact, acting thus as carriers of contagion; then, after the abnormal process has been commenced in the body, a change is brought about in the tissues which renders them suitable for the rapid growth and multiplication of the bacteria,

which in turn augment the change in the tissues, and thus there is formed a vicious circle, the consequences of which are too often fatal." Pasteur, on the other hand, maintains that fermentation occurs only when a microscopical vegetable organism nourishes itself and multiplies at the expense of a part of the fermentable substance.

That all fermentation is accompanied by life, both (fermentation and growth) begin and end simultaneously—that is, fermentation is a correlative phenomenon of life. The weight of evidence goes to prove that Pasteur's explanation is that maintained by the biologists of the present time; that mycrophytes, by their peculiar fermentative functions, induce a pathological condition of the tissues of vital organs which result in their perversion of function, and, if not neutralized, in final extinction of the powers of life.

Anthrax is an infectious disease of animals transmitted to man by inoculation. It is sometimes communicated by flies which have been feeding on an affected animal which has died of the disease. Also by accidental inoculation from handling hides and wool of animals that died victims of anthrax. Dissectors of dead bodies have not unfrequently been destroyed by the absorption of the poison through slight wounds on the hands and fingers of the operator. On one occasion the writer delivered a putrid placenta and fœtus, and although there was not the slightest abrasion of the skin of the hands or fingers, such was the virulence of the poison, six malignant pustules appeared on one hand and five on the other, resulting from its absorption through the cutaneous tissue.

Carnivorous animals are much less liable to the infection than the herbivora. In proof of which assertion, rats which resisted the influence of anthrax, when for several days con-

fined exclusively to a vegetable diet, readily contracted the disease. Davaine made certain experiments upon inferior animals, demonstrating the accumulating virulence of putrid blood by successive inoculations, with the following results: The first series showed that inoculation of a rabbit with a drop of blood putrefied in the open air rarely killed the animal, and that sometimes ten or fifteen drops were necessary. The second series comprised successive inoculations of blood from one septicæmic animal to the next, and showed that 1-10th to 1-100th of a drop was sufficient to kill the fifth, 1-10000th to 1-20000th would kill the tenth, while for the twenty-fifth the one-ten-trillionth part of a drop was fatal (Stimson). These assertions were verified by numerous experimenters, and the opinion was entertained that the bacterium, by infinite multiplication, acted as a ferment in the blood and destroyed the functional activity of the vital organs.

During the years between 1867 and 1870, in the district of Novgorod, Russia, it is well known that 56,000 horses, cattle and sheep perished through the agency of the *bacillus anthrices*; also 528 men and women fell victims to the disease, which was known to be *splenic fever*. Dr. Koch inoculated rabbits and guinea pigs with the fresh blood of animals that had died with splenic fever, and invariably they perished within a short time. He then dried the spore-charged blood and permitted it to assume the form of dust, and after keeping it four years, when moistened and introduced into the tissues of rabbits and mice by inoculation, it was attended with as fatal results as those which followed the use of fresh blood. Not only did these animals die within thirty-six hours, but they exhibited all the symptoms of splenic fever, the disease from the animals perished which furnished the blood for experimentation.

ATTENUATION OF VIRUS.

One of the most interesting and important discoveries of the age for the conservation of the life of animals is the attenuation of the contagium vivum, or living fermentative principle. Pasteur has accomplished for the lower order of animals a blessing similar to that conferred by Jenner in modifying the contagium of smallpox.

He commenced his experiments with the blood of a chicken about to die with cholera. He made a clear concentrated solution of the flesh of a chicken, or a little chicken broth, and then applied to it a minute speck of a drop of blood of a cholera-infected chicken. He then subjected this pellucid solution of flesh to microscopic observation, and it soon assumed a cloudy, milky aspect swarming with living creatures of wonderful vitality and agility. This he called his first degree of culture. To a fresh solution of flesh he applied a speck of this first culture, producing the second degree of culture. In this manner he continued his cultures to the tenth, twentieth, thirtieth, fiftieth, one hundredth, dilution.

His hope was by successive cultures so to weaken the poison that it might afford immunity against unmitigated cholera poison, similar to that observed by vaccination against variola. But what was the result of his experiment? He inoculated a large number of chickens, first with the virulent blood of the veritable cholera patient, and then others in succession with the various cultures in numerical succession, and he found that they all died about the same time and with similar symptoms. That is, that the minutest quantity of the poison that had been diluted to the one-hundredth degree exhibited as intense virulence as the undiluted blood freshly drawn from the dying chicken. This result was unexpected and surely very discourag-

ing. But Pasteur's penetrating and logical mind was not to be baffled by this failure. He reflected upon the wonderful effect of the oxygen of the air upon organic as well as inorganic substances, and procured a glass cylindrical tube into which he placed a portion of sterilized culture-broth and allowed it to remain intact two weeks. He prepared other similar cultures, for two weeks, four weeks, two months, and the degree of attenuation was in proportion to the length of time the different dilutions were exposed to the atmosphere. That is, that No. 1 might kill the animal; No. 3 or No. 4 would produce some slight constitutional effects, but of a mild, unirritating character, similar to those of the vaccine virus upon the human subject, and that the highest degree of attenuation would result in mere local irritation of a very mild character. Experiment showed that the minor degrees of culture proved equally effective against inoculation as did the stronger dilutions. Pasteur's experiments of a like nature among sheep and other quadrupeds proved similarly successful with the anthrax virus.

Koch, now a physician of Berlin, and an ardent worker in the domain of biology, has discovered what he calls the Bacillus Tuberculosis, or the contagium of tuberculous consumption. "He makes the startling statement that one-seventh of the deaths of the human race are from tubercular disease, while fully one-third of those who die in active middle life are carried off by the same cause." It has for a long time been conceded that the disease is communicable, but never before has the medium of its communication been well understood. Koch subjected the diseased organs of a great number of men and animals to miscroscopic examination, and found, in all cases, the tubercles infested with a minute rod-shaped parasite, which, by means of a special dye he differentiated from the surrounding tissue. "Trans-

ferring directly by inoculation the tuberculous matter from diseased animals to healthy ones, he in every instance reproduced the disease." He cultured the bacilli from one generation to another through several successive stages, and every inoculation was followed by a reproduction of the parasite, and the generation of the original disease. Of six Guinea pigs, four of which were inoculated with bacilli derived from the human lung, one of them died in 35 days, and the other three were killed, and on microscopic examination the tissues of their bodies were all filled with tuberculous matter; whereas, the bodies of the other two that were not inoculated were entirely free from the disease. Another very important discovery made by Koch is the limit of temperature between which the bacillus tuberculosis can develop and multiply. He found the minimum degree to be 86° and the maximum 104° (Fahr). This fact is worthy of remembrance by those who for months are called to watch over the dying consumptive, and dispense those beneficent offices which the hand of affection alone can adequately render. Free ventilation, and the utmost cleanliness in removing the sputa and alvine dejections, as well as the occupancy of separate beds by the patient and his friend, afford comparative protection against contagion to the anxious watcher. The sputa appear to be specially freighted with the dangerous contagium. On examination of the expectoration of a large number of consumptive patients, Koch found it filled with bacilli of a highly infectious nature. Neither did drying free the sputa from this infectious quality. "Guinea pigs infected with the expectorated matter which had been kept for two, four and eight weeks respectively were smitten with tubercular disease quite as virulent as that produced by fresh expectoration." These investigations have induced such terror in the minds

of many with reference to the contagiousness of tubercular consumption, that the suggestion has been mooted whether isolation of the patient is not obligatory, as in scarlatina, measles and small pox. But science and experience in the use of the hygienic measures above mentioned, warrant the bestowment of that kindly sympathy and those beneficent offices which are the only solace to the afflicted one in his usually slow, though steady and sure, decline to that "undiscovered country whence no traveler returns."

GERMICIDES.

A germicide is an agent which destroys the vitality of the microscopic organisms the nature of which we have here been considering. An antiseptic is that which impairs the vitality of the bacteria, weakens their functional activity and cripples their multiplication. A germicide is certainly an antiseptic, but the latter is not necessarily a germicide. Alcohol will retard and greatly weaken the functional activity of the torula plant, but the bacteria termo, in broken down putrescent solutions, manifest little or no effect upon their life through the agency of alcohol. A knowledge of those agents that destroy or neutralize their destructive effects upon animal and vegetable life is of the utmost importance. The wealth, health, and prosperity of nations as well as of individual communities, call loudly upon the sympathies as well as the best energies of the brightest intellects. I will therefore avail myself of the labors and investigations of Magnin and Sternberg, who have contributed so largely to the literature of this subject, in collecting the most recent data in summing up the comparative value of some of the agents that are classed as germicides.

Boracic Acid.—One part in 2,000 retards the development of spores (Koch). One part in 1,439 prevents the develop-

ment of bacteria in unboiled meat infusion. Boric Acid, in saturated aqueous solution (four per cent.) failed to destroy the three test-organisms in Sternberg's experiments. But it prevented the development of the micrococcus of pus in the proportion of 1:200; of the M. of Septicæmia in 1:400, and of B. *termo* in 1 to 800.

Bromine. The spores of bacilli are killed by a two per cent. aqueous solution of bromine. In the form of vapor this agent is superior, as regards rapidity of action, to chlorine and iodine (Koch). The development of bacteria in unboiled meat-infusion is prevented by 1:5,597 (de la Croix).

Carbolic acid in the proportion of 1 to 200, destroys B. *termo* and the septic micrococcus in active growth. The micrococcus of hog cholera multiplies abundantly in urine containing one per cent. of carbolic acid, while the micrococcus of fowl cholera is destroyed by six hours' exposure to a one per cent. solution (Salmon). A five per cent solution required two days to arrest the developing power of the spores of *Bacillus Anthricis*, while a one per cent. solution desroyed the bacilli themselves in two minutes. A solution of 1:850 prevented the multiplication of these baccilli in a suitable culture-medium (Koch).

Chloroform is inert as regards the destruction of the spores of the anthrax bacillus (Koch). Chromic acid in the proportion of 1:1000 destroys the virulence of septicæmic blood (Sternberg). Chromic acid was found to have a preventive power surpassing all others, its average being 1:2200, while that of carbolic acid is only 1:226. (Dongal).

Sulph. Ferri. A saturated solution of this salt did not kill any of the test-organisms, and the use of this agent as a disinfectant would evidently be a serious error. It has, however, a decided value as an antiseptic, having prevented the development of all of the test-organisms in the proportion of 1:200 (Arlong, Cornevin, and Thomas).

Heat.—The micrococcus of fowl-cholera is destroyed by exposure for fifteen minutes to a temperature of 132° F. (Salmon). Nine or ten minutes' exposure to a temperature of 120 Fahr. is sufficient to completely kill the bacilli in anthrax blood (Chavean).

Iodine (in aqueous solution with potassium iodide) destroys the septic micrococcus in the proportion of 1:1000; the micrococcus of pus and B. *termo* in 1:500. It prevents the development of these organisms when present in a culture fluid in the proportion of 1:4000 (Sternberg).

Hydr. Bichloride All experimenters agree in placing this in the front rank as a germicide and antiseptic agent. One part in 40,000 prevents the development of the septic micrococcus, and but little less is required in the case of the micrococcus of gonorrheal pus and of B. termo. To destroy the vitality of bacteria in broken-down beef-tea required 1:10-000, while the above-mentioned micrococci were killed by 1:20,000 (Sternberg).

One part in 20,000 prevents the development of bacteria in sterilized tobacco infusion (Bucholz). One part in 1,000 destroys the spores of Bacillus anthricis in ten minutes (Koch).

Oil of mustard in the proportion of 1:33,000 prevents the development of the spores of bacilli (Koch). The development of bacteria in unboiled beef-tea is prevented by 1:3353 (de LaCroix). Oil of turpentine destroys the spores of bacilli in five days, and retards their development in the proportion of 1:75000 (Koch).

Ozone impairs, and, if maintained long in contact, destroys the activity of vaccine lymph (Braidwood & Vacher). All germs suspended in the air, capable of developing in solutions of yeast from beer, are killed by ozone (Chapperis.)

Potassium Chlorate, so much used as a gargle in stoma-

titis, diphtheria, etc., whereit is held to act by destroying certain germs of specific poison, has not only no preventive power, but actually accelerates decomposition (Dongall).

Quinine. A ten per cent. solution of sulphate of quinine has no action upon the bacterium of symptomatic anthrax (Arlong, Cornevin, and Thomas.) One per cent. dissolved with muriatic acid. destroys the spores of bacilli after ten days, exposure (Koch). The development of bacteria in a culture fluid inoculated with a drop of turbid fluid from malarial soil is prevented by a solution of muriate of quinia of 1:900.

Potassium Permanganate. A 2 per cent solution destroys the virulence of septicæmic blood. The micrococcus of pus is destroyed by 1:800 (Sternberg). One per cent. will not destroy the spores of anthrax, but in the proportion of 1:3,000 their development is retarded (Koch).

Zinc Chloride destroys the micrococcus of gonorrhœal pus in the proportion of two per cent.; the septic micrococcus failed to multiply after exposure to one part in 200 (Sternberg).

Potassium Arsenite. According to Koch, arsenite of potash prevents the development of anthrax spores in the proportion of 1:10,000. A certain condition of the soil, moisture, the decomposition of animal and vegetable matter, and high atmospheric temperature are usually the most potential factors in hatching out atmospheric germs, and preparing them for their mission of destruction. Remove these conditions and infections and malignant fevers would be, as a rule, almost unknown. Nature dispenses her blessings with a liberal hand, but she is equally ready to visit with sure and fearful retribution any infraction of her laws by the stupidity, recklessness and presumption of man, in his wanton disregard of the simplest sanitary principles. It

is patent, therefore. to every reflecting mind, how fearful is the responsibility incurred by municipal authorities, when, through stupidity or indifference, they treat with contempt the lessons of experience, as well as the sure and irreversible laws of nature, in neglecting to employ every agency in their power for most rigidly enforcing every sanative measure.

Science not only utilizes her resources for our material comfort and happiness, but she has, through the microscope, unmasked the countless myriads of our enemies, which for innumerable ages have marshaled their forces in secret ambuscade and consigned to premature destruction millions of our race. Let us, therefore, bow humbly at her shrine, treasure up in good and honest hearts her lessons of wisdom, heed her admonitions and practice her precepts, then may we hopefully contemplate the advent in the future of that propitious time when infectious and contagious diseases will be swept from the face of the earth.

TWO CASES OF CILIA BLEPHARITIS ASSOCIATED WITH SIMPLE HYPERMETROPIA, CURED BY CORRECTING THE HYPERMETROPIA, WITH PROPER GLASSES.

By W. C. GIBSON, Macon, Ga.

Other names for Cilia blepharitis, however, are ophthalmia, tarsi tinea, tarsi sycosis tarsi. But I like the name cilia blepharitis and will use this term to designate the disease. The point which I wish to set forth in this article is this: Is hypermetropia associated with all cases of cilia blepharitis?

My experience has been quite limited; but I am quite sure that if I had not corrected the error of refraction in these cases I would not have cured them of their blepharitis as experience showed. As cilia blepharitis is so easy of recognition it will not require a detailed description of the disease for it to be recognized. As this disease is most often found in anæmic and scrofulous patients, and neglect of cleanliness combined with a sluggish circulation and defective hygiene, I will say that my two cases were both exempt from either in the least. But were in the best of health otherwise and surrounded with all the pleasures and comforts that would tend to exempt any one from such an affection. This is another reason I will advance as to the hypermetropia being the exciting and persistent cause.

Case 1. Girl 11 years old, white; American by birth; occupation, attending school. Has been troubled for the past fifteen months, as near as can be remembered, with her eyes. Eyes have been treated, but with no permanent good;

symptom, edges of the lids were hyperæmic and looked angry, red and sore, and the edges were covered here and there with crusts, and several of the lashes in places were stuck together, and only a little rubbing was required to cause them to fall out, and to remove these crusts in some cases would cause a few drops of blood to come. Small white ulcers were to be seen here and there at the roots of the lashes, and these little pustules on being ruptured would exude a muco-purulent discharge.

On getting out of bed in the morning the lids would be glued together, caused by the discharge over night drying. During the day she would complain of a gritty feeling in the eyes and that the eyes felt hot and dry. This was due to a certain amount of conjunctivitis that was existing at this time.

Case No. 2. Young lady 18 years old; American; her case is similar in the symptoms, except duration of the disease, being of one year's standing, and that some of the lashes had undergone some change so that they had become inverted, and this had set up a certain amount of conjunctivitis in her case. Treatment was the same except in patient No. 2 the inverted lashes were epilated.

Treatment. Lids were to be well cleansed of all the crusts, and this was to be done with warm milk, or a solution of bicarbonate soda, grains. 15 to the ounce of warm water. After lids are well cleansed of all the crusts then apply with camel hair brush, an ointment of yellow oxide mercury, grains six to the drachm of vaseline. This to be well washed into the edges of the lids on going to bed and twice during the day. For the conjunctivitis used sulphate zinc, grains three to ounce of water put into the eyes with dropper, ter. die., eyes to be protected with smoked glasses. This treatment was continued for two weeks with marked benefit,

then zinc lotion was discontinued and ointment only used at night.

Patients then saw me every morning when I would touch the edges of the lids with stick pot. al. This treatment was continued for ten days when I discharged them, cured, as I thought. But after the lapse of about two weeks, patients returned, first one and then the other, being troubled with the discharge again. I now proceeded to test their vision, and found as follows:

Patient No. 1—O. S. $\frac{1}{1}\frac{1}{1}$ + 2 $\frac{1}{1}\frac{1}{1}$

O. D. $\frac{1}{1}\frac{1}{1}$ + 2 $\frac{1}{1}\frac{1}{1}$

And on ophthalmoscopic examination Hypermetropia was found to be a little more. Fundus a little hyperæmic. I ordered for her glasses + 2 D. to be worn while studying or at work. And no more medicine to be used, for I thought this would be quite sufficient, or any way I would try it. Patient was delighted with the glasses and expressed herself as being relieved of a strain she had undergone while reading.

Patient No. 2—vision examined,

O. S. $\frac{1}{1}\frac{1}{1}$ + 1.5 D. $\frac{1}{1}\frac{1}{1}$

O. D. $\frac{1}{1}\frac{1}{1}$ + 1.5 D. $\frac{1}{1}\frac{1}{1}$

Ophthalmoscopic examination; fundus quite normal. I ordered for her glasses + 1.5 D. to contract her manifest hypermetropia and had her to wear them while reading, sewing or doing any fancy work.

She also expressed herself as being relieved of a strain put upon her eyes when at work or reading.

Both patients have been seen since, the glasses were ordered and were quite well, and well pleased with tne glasses. I think this will be a permanent cure. Now, was not this irritation and inflammation kept up by the extra

amount of strain put upon the accommodation? I think it was, and will be quite sure hereafter in all my cases of cilia blepharitis to first look out for any hypermetropia that may be existing.

A CASE OF EMPYEMA SUCCESSFULLY TREATED BY FREE INCISION, CONSTANT DRAINAGE, AND ANTISEPTIC INJECTIONS, WITH REMARKS.

By HOWARD J. WILLIAMS, M. D., Macon, Ga.

The following case may be of interest as illustrating the different methods of treating empyema, and a danger attending the treatment finally adopted.

Mrs. S——, aged forty-four, white, housekeeper, mother of seven children, one miscarriage. Constitution and general health good up to the present illness. No hereditary predispositions.

On the 7th of June, 1883, in the seventh month of pregnancy she received a mental shock in the sudden death of a sister-in-law. Under excitement she exerted herself in attempting to lift the corpse, and was carried out of room unconscious. During the night she miscarried. Following this miscarriage she had a severe chill and fever, sharp lancinating pains in the right chest on inspiration, short, sharp cough, increasing dyspnœa. Great prostration lasting for some time followed. In a few weeks she passed into a typhoid condition, attended with coughs, hectic flushes, night sweats, loss of flesh and strength, and enlargement of the chest; the dyspnœa continuing.

I saw her for the first time, October 18th, in consultation with Dr. J. H. Redding, who was then attending her. She was suffering with the above symptoms and some irritation of the kidneys and bladder, due, I think, to irritating diu-

retics. The pulse was rapid, 100 to 110, respiration 30, temperature rising in the evening to 101° or 102° F. On physical examination the following signs were present: enlargement of the right chest, (one and one-half inches longer than the left); the intercostal spaces bulging; no respiratory movements on the right side; flatness on percussion below the third interspace, above tympanitic; vocal fremitus entirely lost over the right lung below the third rib; on auscultation no respiratory sounds below the third intercostal space, bronchial respiration above. Change of position did not affect the physical signs. Over left lung the respiratory sounds were exaggerated. Heart but slightly displaced; liver also slightly depressed.

From the history, symptoms and physical signs, I suspected empyema; introducing the hypodermic needle I withdrew pus, thus establishing the diagnosis.

No one knew what was the early treatment. At the time I saw her the treatmen: was as follows: Quinine, twelve to twenty grains daily; Fellows syrup of the hypophosphites; a diuretic mixture of the infusion of digitalis, tincture of squill, wine of colchicum root, acetate of ammonia, and bitartrate of potassium; locally tincture of iodine, and croton oil had been used.

This treatment having been used for some time with no benefit, it was decided to try thoracentesis. October 20th at eleven A. M., the patient having taken half an ounce of whisky internally and one-fourth grain morphia hypodermically, I introduced the needle of the aspirator in the seventh interspace, in a line with the inferior angle of the scapula. Bearing in mind the dangers of a too sudden removal of the entire quantity of fluid, I withdrew the needle so soon as I had removed half a gallon of pus.

The respirations which before the operation were thirty

went down to twenty; the pulse from 120 under excitement, fell to 96 within an hour, the next day it was 76. Percussion and auscultation indicated that the lung was expanding.

The patient improved very much, the hectic and night sweats improved, the appetite increased and there was some gain in strength. Reaccumulation of pus was very slow, as indicated by physical signs.

The general treatment consisted of compound syrup of the hypophosphites, whisky, antipyretic doses of quinine, and a generous, easily-digested diet.

October 27th, aspiration was again performed, and from eight to ten ounces of pus removed. Within two or three days after this second aspiration she began to lose flesh and strength rapidly, and the night sweats and hectic increased. At the same time she began to expectorate pus very profusely; at times the quantity was so great as to nearly suffocate her, and she was compelled to turn on her chest to allow it to run from her mouth. A bronchial fistula of large size had evidently formed.

November 8th, as she was losing ground so rapidly, I thought it advisable to employ more radical means, and therefore decided to make a free opening, wash out the cavity antiseptically, and allow constant drainage. After morphine hypodermically and whisky internally had been administered, I made an opening one inch in length in the seventh interspace on a line with the inferior angle of the scapula. Through this opening into the pleural cavity I introduced a Jaques elastic catheter, having several perforations in it. With an ordinary Davidson's syringe I injected through the catheter a solution of mercuric bichloride (one grain to ten ounces). The temperature of this solution was 103 degs. F. Only about four ounces could be injected into

the pleura without provoking cough. As soon as this amount was reached, the fluid was allowed to flow out. The injections were repeated until the fluid returned clear. The catheter was retained in place by a thread tied around it and the ends of the thread fixed to the surface of the body by adhesive plaster. To protect the wound and restrain the respiratory movements of the chest, a compress and bandage with a hole through them for the tube to pass, were placed over the wound and bound tightly around the chest. The free end of the catheter was passed through a cork into a bottle, so that constant drainage could take place into the bottle. All the connections were air-tight so that no septic matter or germs could enter the pleural cavity. Every day the pleura was washed out with the above solution until the fluid returned clear.

After this operation she steadily improved. On the ninth day after the operation she sat up, for the first time since June; her flesh and strength rapidly increased, and hectic and night sweats disappeared. In two weeks the bronchial fistula closed and the purulent expectoration ceased. The daily discharge of pus through the catheter amounted at first to four ounces, but by January 1st it had diminished to one ounce daily. There was not at any time the slightest odor about the discharges.

March 1st, as the discharge amounted to only one drachm daily, was odorless and serous in character, I removed the tube. I continued to use the bichloride solution, injecting only two to four drachms at a time.

March 4th, while washing out the cavity she was suddenly seized with spasmodic cough, dizziness, unconsciousness, pupils dilated and insensible to light, tonic spasm of the facial muscles gradually spreading over the entire muscular system, congestion of the face and upper part of the body,

breathing at first ceased, but became stertorous, with frothing at the mouth, pulse at the wrist imperceptible, and heart only faintly heard when the head was applied to the chest. This epileptic condition—for such I considered it—lasted for some time. By artificial respiration, flagelation, hypodermics of whisky and inhalations of ammonia, the heart and respirations were restored to proper action, and within an hour she became sufficiently conscious to recognize friends. Extreme nervous prostration, intense frontal headache, hiccough, nausea and vomiting followed and lasted twenty-four hours, but yielded then to treatment.

The opening soon after closed, there was no return of the trouble, and my patient is now recovered. There is, however, some thickening of the pleural walls over the lower portion of the lung, and only slight shrinking of the chest. The three plans of treating empyema, (1) medical, (2) simple aspiration, (3) free incision, drainage and antiseptic injections, have been faithfully employed in this poor woman's case; the first two have failed, the last has restored her to health. As a test case I can conceive of none better illustrating the value of each method. From the report of Dr. Ewald, of Berlin, of forty-six cases treated in Frerich's clinic, the following table is arranged, showing the results of the three plans:

Medical, 17 . . .	Deaths, 10 . . .	Per cent., 58.8
Aspirations, 8 . .	Deaths, 6 . . .	Per cent., 75
Free incision, 21 .	Deaths, 10 . . .	Per cent., 47.7*

Free incision, therefore, yields the most favorable results, while aspiration is least successful.

Though an empyema may possibly terminate in recovery without surgical interference, yet the occurrence is so rare and the dangers to which the patient is exposed are so

*Dabney. Treatment of Empyema in American Journal of Medical Science, Oct. 1882.

numerous, that it is hardly justifiable at the present time to treat a case by medical means. The dangers attending the medical or expectant plan of treating these cases are: (1) Sudden death from acute œdema of the other lung, from thrombosis in a pulmonary vein from fainting due to twisting a large blood-vessel; (2) exhaustion; (3) suffocation from bursting into a bronchus; (4) discharge into peritoneum and peritonitis; (5) gangrene of the lung tissue; (6) caseous pneumonia; (7) phthisis from inoculation of pus or its products after having undergone caseation: (8) septicæmia; (9) amyloid changes of liver, spleen or kidneys from prolonged suppuration.

The treatment by simple aspiration is not successful in adults, though it is in children In my case I soon saw that I could expect no favorable result. From the time of the first aspiration to the free incision a period of nearly three weeks elapsed, in which, if a favorable result was to follow, signs of improvement should have been observed; on the contrary, except for a few days just after the first aspiration, the patient lost ground and a bronchial fistula formed, with its evil consequences. Why this operation should be favorable in children and unfavorable in adult life it is difficult to say. Dr. Dabney attributes the difference to the following circumstances: "(1) The elasticity of the thoracic walls is greater in young subjects than in older ones; (2) the thoracic organs themselves expand more readily after being subjected to pressure in children than in older persons; (3) the vital forces are much more active in children."* Time does not allow of more than this passing notice of his explanations, yet I do not think they are sufficient to account for the difference.

The treatment by free incision, drainage, and antiseptic

*Treatment of Empyema in American Journal of Medical Science, Oct. '82, 414.

injections is, I believe, the only scientific method of treating these cases, for the essentials of success depend, in empyema as in other large suppurating surfaces, upon the complete removal of pus from the cavity, constant outflow of the secretion as it forms, the exclusion of septic matter and arrest of the septic process if it has already gained entrance. A preliminary aspiration a few days before the incision is made will, I am inclined to think, prove to be serviceable, a large part, if not the entire purulent collection being removed by the aspirator. In my case, it will be remembered, there was, for a few days after the first aspiration, considerable improvement in her condition. If at that time a free incision had been made the case would have pursued a more rapid course. By removing the fluid the lung expands and partially recovers its old relations to the chest-wall and the surrounding organs; the air-cells expand and receive air which stimulates the circulation of the blood in the cell-walls, the lung is thereby nourished and it is enabled to resist sudden congestions; dyspnœa is relieved; the heart, if displaced, regains its natural position, its pulsations are diminished and gain strength; the sweating is diminished, hectic occurs less frequently, and the general strength is improved. The moral impression given by this improvement enables the patient to meet the shock of the more serious operation.

The incision should be made in the seventh interspace in a line with the inferior angle of the scapula, care of course being employed to avoid wounding the intercostal artery. The drainage-tube or catheter should be introduced and the pus allowed to escape.

With regard to drainage, I think constant is better than intermittent drainage. The pus is constantly drained away from the absorbing membrane lining the pleural cavity,

thus diminishing the dangers of irritative fever and septic poisoning. The surface of the membrane is kept comparatively clean and free from the irritation of the pus, thus favoring the growth of healthy granulations. The lung being constantly expanded, fills the pleural cavity, the pulmonic and costal surfaces come in close contact and early union of these surfaces takes place. diminishing the size of the cavity. The expanded lung admits more air, more oxygen is received and the nutritive process is promoted.

Continuous drainage may be obtained by the drainage-tube or elastic catheter. Prof. S. D. Gross considers the use of the drainage-tube "both harsh and dangerous," but does not give his reasons for thus condemning it. Flint, Sr., objects to the tube because he thinks it "excites irritation and is liable to be broken, a portion remaining within the chest."* This last accident has occurred within his own knowledge. Notwithstanding the fact that the opinions of two such authorities are weighty, yet among the advocates of the tube are Aitken, Bryant, Austie, Erichsen, Ashurst and J. C. Wilson. Dr. Dabney, speaking of the objections to the drainage-tube, says: "With respect to the use of the drainage-tube, experience does not bear out the apprehensions which have been alluded to, that the drainage-tube would prove irritating except when the discharge has become very slight; and with reasonable care, it is very unlikely that the tube would become broken so as to leave a piece in the pleural cavity."† If the tube is kept perfectly clean and is frequently changed, I can see no reasons for apprehension.

The time when the tube may be safely removed and the opening be allowed to close, is a question of grave importance, as upon it often depends the success or failure of the

*Clinical Medicine, p. 112.

†Treatment of Empyema in American Journal of Medical Science, October, '82.

treatment. The best indications that the time for the removal of the tube has arrived are, (1) the amount not exceeding one or two drachms daily, (2) the serous character of the fluid, (3) absence of fetor, (4) a tendency to spontaneous discharge of the tube.

The fluids used for washing out the pleura have been various. Solutions of iodine, salicylic acid, mercuric bichloride, thymol, chloride of zinc, permanganate of potassium, carbolic acid and boracic acid have all been used. Both carbolic and boracic acids are dangerous, and have justly fallen into disrepute, as serious and fatal consequences from their absorption and systemic poisoning have been reported. Mercuric bichloride, in one fiftieth to one fortieth per cent solutions, is now the preferred fluid for washing out these cavities; salicylic acid and iodine standing next. In my case the bichloride of mercury proved highly antiseptic and disinfectant, no signs of septic decomposition ever being present. Whatever the character of the fluid, the temperature should be 103° F., or a little above the internal temperature of the body. The quantity used should not exceed one-fourth the quantity of pus removed. It should be injected very gently and the injections repeated until the fluid returns clear. The cavity should be washed out in this way once or twice in twenty-four hours.

The dangers of alarming symptoms and of sudden death attending thoracentesis and washing out the pleural cavity are quite serious and require caution in these cases. Death may occur during the puncture or while injecting the cavity. Besnier and Raynaud in 1876, reported two cases in which sudden death, apparently due to syncope, occurred while the puncture was being made. I have seen one case only in which serious symptoms occurred while puncturing

the pleura; a child in the Jefferson Medical College Hospital, swooned but soon recovered and the operation was continued without further trouble. In 1880 two cases were reported to the Société de Biologie, in which the cavities had been repeatedly injected before fatal consequences followed. I have myself witnessed sudden death in one case, in the Jefferson College Hospital, after the cavity had been washed out several times without serious symptoms. In the case just reported the patient's life was seriously endangered after the cavity had been washed out daily for four months; alarming symptoms, except a slight cough when the limit to the quantity of fluid injected was reached, never previously occurred. In both these cases the trouble occurred while the fluid was being injected and not while it was flowing out. This statement agrees with the general observation that danger is present only during the injection.

With respect to the causes of the sudden consequences, M. Sevestre, in a report on this subject, states that death may be due to syncope, the exact origin of which is not apparent. "In certain cases," he says, "it appears to be reflex and due to the pain, or to the moral impression accompanying the puncture in a debilitated person. In other instances the syncope is probably brought about by an anæmia of the bulb at the moment when the patient attempts to rise. In all cases, however, the syncope is probably favored by an alteration in the condition of the muscular fibres of the heart, and perhaps also by a certain degree of pulmonary congestion." I attribute the trouble in my case to an irritation of some fibres of either the sympathetic or phrenic nerve to the pleura, this irritation was reflected to the spasm-centre in the brain, and gave rise to the severe epileptic condition. These dangers should make us extremely

cautious in the management of these cases, and keep us constantly on the look-out for danger.

In these remarks on the treatment of empyema I am indebted for much that is brought forward to an article on the subject read some months ago by Dr. J. C. Wilson, of Philadelphia, before the Pennsylvania State Medical Association, and also to an exhaustive communication from Dr. William C. Dabney, of Charlottesville, Va, in the *American Journal of Medical Sciences* for October, 1882. I claim no originality of thought in this paper, and have only reported the case, and have given a condensation of the reported experience of others on this important subject, in order that I may contribute my little share to the general good of our profession and to the relief of suffering.

THE PROPAGATION OF LEPROSY.

By H. McHATTON, M. D., Macon, Ga.

The question of the contagion or non-contagion of leprosy has been one of little practical importance to the profession in the United States until within the last few years. Now the foci of the disease that we have among us and on our borders, has aroused a decided interest in dermatological circles, and even given rise to some political moves in California. The literature on the subject is limited, and confined, as far as I have been able to learn, to a few short articles. To within a comparatively recent date the disease has been looked upon as contagious. From the earliest times laws for the isolation of lepers have been found in every land where they existed to any extent. As early as 512 a monastery was erected in Ireland for them. While in England a law was in force as far back as the tenth century, by which a woman could obtain a separation from her husband if he were found to be afflicted with this disease. The once prevalent belief that leprosy matured and spread through Europe by the medium of contagion, derived from the returned crusaders, is entirely negatived by these laws. At present we have in Mexico, Sandwich Islands, Central America, South America and Cuba, laws for the isolation of the lepers, but as far as I have been able to learn, they are not enforced. The laws in Cuba are stringent, but popular belief is so much against the contagion of the disease that they are a dead letter, and the lazarettos are re-

sorted to, as are the hospitals for miserables here, namely, by those who have no means. Lepers are licensed as beggars in the city of Havana, or at least were in 1881.

Drs. Hagen and Trousseau, well known practitioners on the Sandwich Islands, regard the disease as non-contagious; Dr. Shoemaker, of Philadelphia, regards it as only contagious through inoculation.

Dr. J. C. Graham, (*Canada Medical and Surgical Journal, October*, 1883,) in summing up his paper, states: "Finally, leprosy may be regarded as one of the least contagious of diseases, and one which will only spread under a combination of favoring circumstances, such as were found at Tracadie. In all probability the disease is communicated solely by the means of inoculation, and opportunities for such inoculation are very few indeed; unless there has been a long and intimate contact with the diseased person."

Drs. Fox and Graham, (Trans. Amer. Der. Assoc. 1883,) submit ten propositions to the profession, among which occur the following: "It is undoubtedly contagious by inoculation." "Under certain conditions a person may have leprosy, and run no risk of transmitting the disease to others of the same household or community."

Dr. White, (*American Journal of Medical Sci.*, 1882), speaking of the bacilli leperæ, says: "There is no reason why the bacterium may not satisfactorily explain all local and pathological processes characteristic of the disease; and it has been found in connection with cases from as many parts of the world, and by so many reliable and experienced observers, and has under all circumstances presented so uniformly identical appearances that the probability of such specific relationship has grown stronger and stronger, the results of inoculation are as yet negative."

Dr. J. L. Milton (Pathology and Treatment of Diseases of

the Skin) says: "If the question be made to depend upon the number of votes, it must be decided in favor of the view that it is hereditary, an opinion to which the majority will incline when the point can be raised at all" (page 287). In speaking of a case of Dr. Pollard's, in which direct contagion was claimed, he says (page 289): "Were leprosy so directly contagious as this, it would be easy to accumulate irrefragable proof in support of the doctrine, whereas the evidence proving it to be so is very doubtful, while it is as certain as anything can be that people remain for years exposed to contagion in every form without being affected."

The report of the English College of Physicians states that out of sixty-six answers to their inquiries, only nine speak of it as contagious, forty-five represent it as non-contagious, and twelve are silent. In April, 1842, Gen. Wilkins Kendall and seventeen other prisoners of the Santa Fe expedition, were confined in the hospital at San Lazaro, in the City of Mexico, and remained there for more than two months. His book was published long after his release, and he makes no mention of any of his companions having contracted the disease. His description of the lepers and lazaretto is the best I ever saw, and I hope to be excused if I quote from him rather extensively.

Kendall's Santa Fe Expedition, vol. II., page 221: "The room in which the men afflicted with leprosy are confined is nearly 300 feet in length by about 35 in width. The windows are large and numerous, admitting a sufficiency of air during the heat of the day, and are all grated. At first I could see no reason why the windows of a hospital were grated, but afterwards learned that when a person is known to be a lazarone or a leper he is at once taken to San Lazaro and there confined as a kind of prisoner until liberated by death, for I believe that none ever recover from the horrible

disease. At the time we were confined in the hospital the male department contained fifty or sixty inmates. The appearance of the unfortunate lepers is loathsome and hideous to a degree that beggars description. It makes its first appearance by scaly eruptions on different parts of the face and body of the victim, and these eruptions are never perfectly healed. The limbs of many, and more especially the hands, at first appear to be drawn and twisted out of shape; gradually the nose and parts of the face are carried away, while the features become distorted and hideous; the voice assumes at times a husky and unnatural tone, and again the doomed patient is unable to articulate except in a shrill, piping treble; with many, when near the last stages, all powers of speech are lost.

"Whether the leprosy of Mexico is contagious I am unable to say. With many I have little doubt that it is to a degree constitutional, being in fact hereditary and perhaps never entirely eradicated from the blood. The climate may have some effect in engendering and keeping alive the disease, but of this too I am uncertain. The common belief among the lower classes is that it is communicated by contact, and indeed, I am inclined to believe that the only risk a person runs of taking it is from touching the person of one affected with it in its worst stages. The families and friends of the lazarones would frequently visit them. They would sit and converse with them, too, for hours, apparently regardless of danger; but for myself I took particular care not to come in close contact with the unfortunate lepers. Notwithstanding their lot would seem most melancholy, as a body they appeared well to enjoy themselves. Afterwards and while confined among them for some two months I had every opportunity to observe them closely, and one who has had no such opportunity can hardly imagine how

much happiness and hilarity prevail among beings doomed to a lingering but certain death. Many of them were continually playing at draughts or cards, taking the most intense interest in the games. On many occasions I saw parties of four engaged at cards who had not a single nose or entire finger among them. If all the Mexican inmates of San Lazaro were afflicted with leprosy, and we were told that such was the case, there must be three or four different species of the disease. The faces of some of the lazarones were covered with blotches and eruptions, while their hands and feet were unmarked.

"Others, again, had complexions exceedingly fair and unblemished, yet their feet and hands were distorted and decayed. Some of the victims of the dreadful scourge were covered from head to foot with sores and ulcers hideous to look at, and then there were two or three cases where the patients presented no other marks of the disease than the loss of a nose. But the most singular case of all was that of an old Spaniard. His flesh appeared to be entirely gone, dried up, his skin turned to a bluish purple, and his whole appearance was so strangely changed and distorted that he more resembled an animated mummy than aught else I can compare him to. His senses were still retained, while his actions and conversation convinced us that he was a well-improved and gentlemanly man." There is no effort made in Minnesota to isolate the lepers. In 1864 there were twelve cases; in 1870 there were eighteen; all of which had come from parts of Norway where the disease is endemic. Prof. Brock (who came from Norway to study the disease in Minnesota,) considers them all as depending on heredity, either in a direct or lateral line. If he had any doubt, he says, as to the propagation of this disease by heredity, these cases would have convinced him. At present there are only

six cases, all from Norway. The cases to which I especially desire to call attention are with one exception in one family. The father was a leper. I am not absolutely sure, but think the mother was never affected.

Mr. A., a merchant, and a man of much intelligence, was affected for about ten years with this disease, of both the tubercular and anesthetic variety. From the time the disease first made its appearance till the day of his death his partner B. lived in the same room with and took care of him, eating and sleeping with him; and after the disease had rendered Mr. A. incapable of taking care of himself, even washed and dressed him, in fact was the only attendant he ever had. Mr. A. was the best read man I ever saw on leprosy. He read four or five languages, and had read everything on the subject. His opinion was that the disease was only inherited. He had many friends, and his rooms were full of gentlemen every evening. Children were especially fond of him; and I do not suppose there was a child in his neighborhood that he did not fondle and kiss. He had two brothers, one died a leper in New York, and the other has never been afflicted. His sister, Mrs. M., was married quite young, and has now been a confirmed leper for at least fifteen years; she has three sons and one daughter. The eldest son is married and has two children. Neither he, the children or his wife show any symptoms thus far. The second son has been a leper about three years. The third shows no signs of the disease. The daughter is affected. Mrs. M. has been married about forty years. Her husband was thoroughly examined by me in 1881, and showed no signs of the disease. These are all people of education and position; they are in a large city, and fulfil all the regular calls of society, not being ostracised in the least.

Another case that came under my observation was that of a Chinese cooley who lived in the same house with a gang of about a hundred, and was the only case that occurred in the gang. There is usually a case or two in the New York hospitals, and as far as I know there is no effort made to isolate them.

I lived for a number of years where this disease was quite common. During that time I knew intimately lepers in all stages of the disease, and never saw a case that was supposed to have been acquired. I have talked on the subject with the non-leprous in the families of lepers, and they have invariably told me that they considered themselves liable to an outbreak of the disease at any time.

The conclusions that I draw from my limited experience with this disease are—

1st. It is non-contagious.

2d. It is only propagated by heredity.

MITRAL INSUFFICIENCY, TOGETHER WITH A FEW POINTS ON THE PHYSICAL EXAMINATION OF THE HEART.

By CHAS. W. HICKMAN, M. D., Augusta, Ga.

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Delivered at the Clinic of the Medical College.

Gentlemen: We have before us to-day a case of great interest, and one demanding our closest study and attention, namely, that of a valvular lesion, an insufficient action of one of the heart valves, upon which our life is so dependent.

In order to appreciate fully what is before us, it is necessary first of all to hold constantly in view the construction and workings of the important organ with which we wish to deal.

The heart is a muscular apparatus, or more properly speaking, a series of muscular chambers combined in one, while its action may be compared to that of a force-pump, its object being to distribute blood throughout the entire body. It consists of two smaller receptacles on either side, the right and left auricles, and joined to them two larger ones, the right and left ventricles, into which the blood pours, and the forcible contraction of which gives to the organ its well-known force-pump or driving-engine properties.

The superior and inferior vena cava pour the dark venous blood into the right auricle, from thence it passes through an auriculo-ventriculo, opening into the right ventricle; by the contraction of this it is thrown through the pulmonary

artery at its top to the lungs, there to be vitalized by receiving oxygen from the air. Teeming now with life-giving properties, it returns by means of the pulmonary veins to the heart, emptying into the left receptacle or auricle, and from thence passing into the left ventricle, the contraction of which latter, sending it through the aorta at its top, the first great artery of our system, and into all its ramifications and sub-divisions.

Having now accomplished its work, having given up its life and health to all portions of the body, the blood is to all intents and purposes dead without its oxygen renewed.

The venules then collect it from all parts, pour it into the smaller veins, and from thence into the larger, and so on until it again returns into the ascending and descending vena cava, again to pass into the right auricle and to go its round as before.

For the completion of the mechanism of such an organ, it is necessary during the play of the ventricles that some arrangement should be made to prevent a return flow of blood from whence it came. Just such do we find in the valves placed at the auriculo-ventriculo openings, on the right side the tricuspid, on the left the mitral. As the ventricles contract, the closure of the orifices by the valves completely prevents a return flow of blood. At the pulmonary artery and aorta we find three valves, semilunar in shape, and so arranged that as the ventricles dilate, their falling together effectually shuts off a backward flow of blood.

The perfect action which the heart exhibits is indeed wonderful. Although in reality a double organ, its action is that of one. The two ventricles contract together, and dilate together, then comes a short period of rest. This process occurs about sixty-five or seventy times in the course of a minute.

In the examination of the heart a thorough, systematic method must be observed throughout, or else we will constantly encounter innumerable difficulties. As various methods are given for this purpose, some rather confusing to a student, I wish to describe the most perfect with which I have ever met, one formed rather from a combination of the most perfect, and calculated in the main always to yield up the wished for results. In so doing I mainly follow the teachings of my honored preceptor, and that prince of teachers, Schrotter.*

First, by inspection of the heart region a few points may be gleaned in regard to the position and character of the impulse as well as anything of an unnatural appearance in that neighborhood.

More important still are the results obtained from palpation, or placing the hand over the seat of the organ. In this way may not only the position of the impulse be more accurately determined, as well as its character more readily appreciated, but also a peculiar trembling movement (the purring tremor of Laennec), or a rougher feeling reach the hand at times, and almost always indicative of mischief.

Far more important, though, are the results obtained from percussion of this organ. You will bear in mind that the heart lies obliquely in the chest, behind the lower two-thirds of the sternum, and projecting over towards the left side. The right lung extends to the middle of the sternum. The left does the same, as far as the fourth costal cartilage, when its boundary line ceases to extend so far, leaving a portion of the heart uncovered, which mainly consists of the lower portion of the right ventricle, with the apex of the left. In percussing a heart, then, the first thing to do is to find its apex. This is done by placing the hand over

*Professor Extraordinary and Successor to the Clinic of Oppolzer, in the University of Vienna.

the chest wall, when, at a point corresponding to an inch and a half to two inches below the left nipple, and somewhat to the inner side, its beat against the chest wall is felt. In order to insure ourselves against error, let us commence percussing from the outer side towards the point taken for the apex, and upon reaching it if we have been correct in our surmise, the clear note of the lung tissue is immediately changed for the dull sound of a solid organ. Let us now carry our percussion obliquely upwards towards the sternum, upon reaching the edge of which, or a little over, the clear lung note again strikes our ear. This brings us to the right boundary. To find the upper boundary, we commence below the middle of the clavicle, and proceed downward over the lung until at the lower border of the fourth costal cartilage, a dull sound tells us that we have reached the point sought. Although as we can see, this does not give us the actual size of the heart, but only that portion left uncovered by the lungs, yet we find that it answers for all practical purposes.

Equally as great, if not more important, results do we obtain from a close study of the heart *sounds*. The ear placed over this region receives two sounds, the first occurring during the contraction of the ventricles, or as we commonly express it, the *systole* of the heart, and produced mainly by the closing of the *auriculo-ventriculo* valves, although the contraction of the ventricles and bound of the heart against the chest wall, aid in its formation; the second occurring during the dilation of the ventricles or *diastole* of the heart, and produced by the sudden falling together of the semilunar valves of the pulmonary artery and aorta.

If we wish to separate the sounds of the individual valves, we listen for the tricuspid at the lower portion of the sternum, for the mitral at the apex. The semilunar valves of

the pulmonary artery, are best heard in the second intercostal space near the left edge of the sternum, while the ear is carried to the second intercostal space of the right side to catch the play of the aortic valves.

In disease, the heart sounds vary greatly from what they are in health, and this condition makes itself known to us by more or less blowing sounds commonly classed under the term of *murmurs*. These vary greatly both in intensity and character, and may be so low that the ear can scarcely detect them, or so loud as to be distinctly heard at some distance from the patient. They may be soft and musical, or harsh and grating. In order to appreciate any deviation from the normal sounds and the meaning conveyed thereby, it is important to have constantly at our finger's end (so to speak), the events taking place during the systole and diastole of the heart. At the moment of the systole, the two ventricles contract, producing the impulse against the chest wall, the *auriculo-ventriculo* valves close and the blood rushes along the pulmonary artery and aorta. At the moment of the diastole the ventricles dilate, the blood passes from the auricles into the ventricles and the semilunar valves guarding the orifices of the pulmonary artery and aorta, suddenly close together, producing the short abrupt second sound of the heart.

The first question always to be answered then is, does the murmur we hear occur during the systole or diastole of the heart, and this point undetermined, the mere fact of hearing a murmur gives us very little, if any, aid in the examination of our case. Nor is this by any means so easy as it may seem at first sight. If the heart would only beat as in its natural condition, giving us a murmur in one or the other of its sounds, we could then easily tell to which the murmur belonged, but unfortunately in its diseased state its

action is often so stormy and rapid that it becomes a matter of considerable difficulty to tell where it belongs. We sometimes hear of a pre or peri systolic or diastolic murmur, and that such and such is the case, because a pre systolic or a peri systolic (or diastolic) murmur is at hand. I wish to impress upon you that if we are only sure that the murmur belongs to either the systole or diastole, it is a matter of no importance whatever whether it be pre, peri or anything else. As before stated, however, this is at times a matter of considerable difficulty and as the prolonged sounds seem to run into each other to a degree indeed perplexing to an auscultator, we do find that by separating a pre systolic from a peri diastolic or a peri systolic, from a pre diastolic murmur, a certain amount of aid may be given us in isolating the abnormal sounds.*

The next question which naturally strikes us is, whence comes this murmur, and to what is it due, which valve is at fault, or is any valve at fault; and as this brings us at once to the examination of our patient, let us see if the symptoms as they present themselves, together with the physical signs we obtain, will not give us all that we require to fully understand the case as it really exists.

The patient comes to us complaining of shortness of breath, asthmatic attacks, these attacks brought on by the slightest exertion, pain at the same time being frequently felt over the heart region, accompanied by palpitations greater or less in degree. Adopting the method shown, we find that inspection does not give us as much aid as is usual in these cases, but palpation reveals the heart's impulse, instead of being in the fifth intercostal space somewhat to the inner side of the line from the nipple, to be in reality

*Note: The manner in whichthis is more clearly shown to students, cannot at present well be represented without an especial diagram for the purpose.

nearly an inch and a half to the outer side. Percussion not only confirms this, but tells us also that its line of dullness extends almost to the middle of the sternum, showing the heart enlarged in its transverse diameter. On placing our ear over the chest, instead of the two clear and distinct tones we always get from a healthy heart, we receive a prolonged first sound, in other words a *systolic murmur*, but with the second sound remaining unchanged.

Closely listening to the different valves, we soon recognize this murmur as loudest at the apex, telling us of trouble at the mitral valve.

Still attentively listening, we notice that the second sound, although everywhere clear and distinct, has nevertheless a decided accentuation over the pulmonary artery. What then do these facts tell us, and what conclusion may we draw from them? If we are sure that the heart is enlarged in its transverse diameter, that we have present a systolic murmur, heard loudest at the apex, accompanied by a decided accentuation of the second sound over the pulmonary artery, we may with all certainty know that we have to deal with an imperfect action of the mitral valve, an action insufficient during the contraction of the left ventricle, to prevent the blood from pouring back into the left auricle. Let us look a little further into this.

The increased amount of blood which reaches the left auricle distends and enlarges it. This reversed pressure, so to speak, continuing through the pulmonary veins reaches the lungs and from thence extends through the pulmonary artery to the right ventricle, and unless here arrested by the compensating action of this latter, reaches the right auricle and finally the entire venous system, producing numberless troubles into which we have not time at present to go. We can easily see then that the compensating action of the

right ventricle necessarily tends to its hypertrophy. In addition to this the left ventricle being over-filled with blood during its dilation from the engorged left auricle, naturally works under a high pressure and becomes enlarged. Hence the increased area of percussion dullness. The increased column of blood, also, thrown upon the semilunar valves of the pulmonary artery gives rise to the accented second sound heard over this region.

Some time back, at our clinic, we had a case of insufficiency of the aortic valves, as well as what is quite rare, one of stenosis of the pulmonary artery, and did time permit, the differential diagnosis would be interesting in the extreme, but this unfortunately we must defer for another lecture.

A few words in regard to the treatment of this affection. Unfortunately the heart cannot be taken out and its valves repaired, or a new one put in, as a pump sent to a plumber, yet, for all that, much may be done towards comfortably prolonging the life of our patient, and greatly relieving the unpleasant symptoms to which the insufficiency gives rise. The tendency of the affection as the rule, is not bad, and the patient carefully warned to observe a few hygienic rules, may live a lifetime of comparative comfort. So long as the compensating action of the right ventricle is well kept up, so long have we nothing particularly to fear. All our attention, therefore, should be directed to this end, and every thing strictly guarded against which tends to interfere with it. A quiet life, regular hours, a freedom from all excitement, should be rigidly enforced.

Violent exercise, such as running, walking rapidly, climbing heights and the like, as well as intemperance in eating and drinking must be carefully avoided. As the rule, spirituous liquors, tobacco, strong tea and coffee, should be forbidden.

When the right ventricle fails in its action, or even the left becomes uncertain and weak, our main reliance consists in the administration of digitalis and iron, but as digitalis in heart affections constitutes quite a subject in itself, a discussion of it we must put off for another time.

And now, gentlemen, in conclusion let me say, that although in reality there is scarcely a department of medicine, where in the large majority of cases we can tell with such mathematical accuracy with what we have to deal, yet equally true is it that scarcely a department demands on our part more pains-taking and patience. A thorough appreciation of the normal heart is not acquired by the examination of one but of many normal hearts, much more so is this the case when we come to deal with the numberless affections to which this organ is liable. Not by the examination of one, but of hundreds of abnormal hearts can we ever hope to obtain anything like proficiency or be able like the leader of some grand orchestra to isolate among the confused Babel of sounds, anything that tends to produce discord or lessen the harmonious workings upon which the great effect depends.

THE PLASTER OF PARIS DRESSING IN THE TREATMENT OF FRACTURES.

By W. O'DANIEL, A.M., M.D., Bullards, Ga.

Every surgeon has his own peculiar views in regard to the treatment of fractures. Some prefer wooden splints, hard rubber, pasteboard, etc., while others use starch or plaster, and a few contend that if the fractured ends of the bones can be kept in opposition, nothing more is necessary to secure a good recovery; but it is generally considered necessary for the limb to be bandaged, if for no other purpose, to prevent spasm of the muscles caused by the constant irritation produced by the fragments. Without some support, these painful spasms would require treatment for the comfort of the patient, with opium or some of its preparations, or other narcotics or anodyne, which, if long continued, would likely prove detrimental to the patient.

In 1877, I think it was, I purchased Prof. Lewis A. Sayre's Orthopedic Surgery, which is a stenographic report of this distinguished surgeon's lectures at Bellevue Hospital Medical College, New York, during the session of 1874–5. By the careful and frequent perusal of this valuable work, I have acquired much valuable information, especially in the use and application of the plaster dressing in fractures, and for the correction of certain abnormal conditions, which naturally come under the head of Orthopedic Surgery. A second edition of this book has been issued by D. Appleton & Co. No physician's library is complete without it.

Since that time I have employed the plaster dressing almost exclusively in nearly all fractures.

When I first commenced the use of plaster dressings, applied immediately after the accident, I feared the results of swelling, but I was very soon convinced, by practical experience, that the proper application of a roller bandage before the application of the plaster dressing, will always prevent trouble in this way. If the limb is already swollen, I apply the plaster all the same, remembering, however, to adjust the limb accurately and of the exact length. In fractures of the femur, of course such extension as will keep the limb of the proper length, is absolutely necessary to prevent shortening. This is done by the application of two adhesive plasters two or three inches wide (or in proportion to the size of the limb) extending from the malleoli to several inches above the condyles of the femur, in order that the extension may be made upon the thigh, over which apply the roller, leaving the ends at the malleoli of sufficient length to attach the necessary weight, which may be shot in a bag, a piece of iron, or anything else of the desired weight which can be conveniently attached by means of a suitable cord to the ends of these adhesive strips. This weight must pass over a pulley, either attached to the bed or to a board at the foot of the bed, firmly fastened to the floor. I usually procure a board about four inches in width and of the proper length, and saw out a section from one end sufficiently wide to admit a spool from which ordinary sewing thread has been taken, and attach it to the end of the board from which the section has been removed, and fasten it by means of a large wire so that it will roll easily, for a pulley, over which the cord to which the weight is suspended, passes. I rarely ever have occasion to employ counter-extension in fractures of the femur, but sometimes

raise the foot of the bed to prevent the slipping down of the patient; but even if this is not done, and the patient does slip towards the foot of the bed, if the pulley and weight are properly arranged, the extension will be all that is necessary, as it will continue to be equal. Always surround the limb properly with cotton batting before applying plaster bandages, and if it should be necessary to employ a very stiff dressing, pasteboard may be torn (not cut) and wetted and placed evenly over the cotton batting before applying the plaster. After the bandages have been applied, it is well to sew or tack them at different points, as it may be necessary for them to remain some time. Before the plaster sets, always carefully mould it to the limb by gentle pressure with the hands.

If we find after the limb has been dressed, that it is not of the exact length, an assistant with a perineal band can make the necessary counter-extension, while the surgeon extends the limb to the proper length, after which again mould the dressing to the limb by pressure, and attach the necessary weight.

Further interference is generally unnecessary until union is perfect, but should the limb be dressed when in a swollen condition, which usually passes off in a few days, and when the limb approximates its normal size the dressing frequently becomes too loose. This can be easily remedied by taking out a section of the plaster dressing, its full length, and of sufficient width (without removal) to cause it to again surround the limb nicely and comfortably, and kept in position by means of strips of cloth tied around it, or by a roller bandage.

In 1880 I was called to see a woman (Frances) on the plantation of Col. Wm. Faulk, whose knee had been crushed by the wheel of a wagon which was very heavily loaded.

I found the lower end of the femur broken obliquely, and the condyles driven off from the shaft of the bone, and the limb badly swollen.

This accident occurred about twelve hours before I saw her. She could not bear to be moved in bed, or have the knee examined, on account of the intense pain. Chloroform was administered and a careful examination had. The fracture was found to be compound, and the crepitus could be distinctly felt, and the grating of the bones heard by all present. A double inclined plane was first suggested to my mind, as I had treated many fractures of the lower end of the femur in this way, but upon reflection I concluded to use the plaster dressing, after Sayre's plan, notwithstanding the fearfully swollen and mutilated condition of the limb. A roller bandage was first applied from the toes to the upper third of the femur, taking care to cover the knee with a figure of-8 turn and designating the point of laceration by running a common pin, with the point upwards, through the roller to mark the location for a fenestra, which was an absolute necessity for the exit of such discharges as might accumulate in the flesh wound caused by the protrusion of the end of the bone. I then surrounded the limb well with cotton batting and applied the plaster bandage. Absolute immobility was obtained in this way, and the patient, who only a short while before was in great agony, was now comfortable.

In ten days the swelling had partially disappeared and the dressing became too loose. A section was taken out, the full length of the plaster splint, without removal, and caused to again surround the lint snugly by the use of strips tied around the plaster dressing. After this the knee could be examined whenever necessary, and at will, without removing the bandages, but by loosening the strips and separa-

ting the plaster splints from which the section had been taken.

In six weeks perfect union was had, the bandages were removed and a starch bandage applied, and the woman put upon crutches, and perfect recovery ensued, except an incomplete or false anchylosis of the knee joint, which only existed a few months.

I am quite confident that no other mode of treatment would have given results so satisfactory, and certainly the patient would not have b en so comfortable under the old plan of treatment for such injuries. If these dressings are so applied as to surround the limb completely and equally, and kept so, displacements are impossible, and hence there can be no cause for deformity; no fears of splint sores, unequal pressure and their manifold disastrous results.

On the 12th of October last I was called to see a child four years old, who had, a few hours previously to my visit, had his femur broken transversely at the middle third, with considerable displacement and shortening. The limb was adjusted and the plaster dressing applied in the usual way, the extension made as heretofore described in this paper by means of a pulley and weight, and the patient left comfortable. In four weeks the dressing was removed and the child had a perfect recovery, without the slightest deformity.

On the 28th of January of this year, I was called to see a boy fifteen years old, who had his leg caught between the spokes of a wagon-wheel while it was making rapid revolutions, causing a fracture of the lower end of the femur obliquely, with displacement and shortening. About twelve hours had elapsed between the accident and the application of the dressing, hence there was considerable swelling. Notwithstanding this, the limb was carefully adjusted and the fracture properly dressed in plaster, and the extension made

as heretofore advised. The boy was left comfortable. In twelve days the dressing was found too loose. A section was removed from the plaster splint, and by a proper use of the strips, was again made to surround the limb closely. The boy is now well and without deformity.

On the 27th of November last I treated the fractured leg of a woman who had been thrown from a horse, breaking both tibia and fibula at the lower third, with considerable displacement. I saw patient twenty four hours after accident and found limb greatly swollen and contused. The bones were adjusted and the plaster splint applied in the usual way. The dressing in about ten days became too loose, and was tightened (after the removal of a section) by the use of strips, thereby causing it to again surround the limb closely. The patient was soon put upon crutches, and had a speedy and perfect recovery.

In November last (about the 5th), my son, William A. O'Daniel, had the misfortune, while engaged in parlor skating in the city of Macon, Ga., to fall and break both bones of his leg at or near the middle third. He received prompt attention from my distinguished professional friends, Drs. Blackshear and Stephens, but he was so very anxious to return to his own home for treatment, he positively refused to have his leg set, but was made to rest quietly by the use of morphine subcutaneously. He was brought to my home in Twiggs county, on the following day by railroad, upon a suitable lounge, and the plaster apparatus applied. In less than two months he was entirely well and without the slightest deformity.

These are five cases out of a great many which I could mention, which have fallen under my professional care since I commenced the use of the plaster dressing.

The plaster splint, in my opinion, is far preferable to all

others, because accidents can be successfully treated with less trouble to the physician or surgeon in charge, with less risk and with a greater degree of comfort to the patient; and certainly so in preventing displacements, which, if not discovered and corrected before union, sometimes leave life-long deformities, which frequently disable patients who remain standing indices against competent and skillful surgeons, who are frequently considered by the unprofessional responsible for the ignorance or negligence of nurses and the obstinacy of patients themselves; and last, but by no means least, the patient is saved a long term of service in bed, on his back, from probably a simple fracture of the leg.

This comparatively new method of treating fractures is certainly a great blessing, especially to patients as well as surgeons outside of cities and hospitals, where frequent professional visits are impossible. Now I do not wish to be construed as conveying the idea that the application of the plaster apparatus is a simple procedure that can be done in a careless and unskillful manner without damage to the patient and without risk to the reputation of the surgeon. Like every other application in surgery, it must be properly and skillfully applied, and after it has been so applied, it must be carefully watched until union takes place, especially when applied over contused and lacerated limbs. It must neither surround the limb too tightly nor too loosely, but evenly and sufficiently close to keep the bones properly adjusted. The plaster bandages must not be tighter than the well-applied roller, if so the equalization of the circulation will be disturbed. Many distinguished surgeons doubt the propriety, and even the practicability, of applying the plaster dressing over badly contused or lacerated wounds. Of course when this is done the vigilant eye of the surgeon should be in readiness to detect any and all abnormal condi-

tions of the patient, in order that timely and necessary changes may be made to insure success in the treatment and relief and comfort to the patient.

In conclusion, I take the liberty to append an extract from a private letter from the distinguished surgeon, Lewis A. Sayre, of New York, to myself without his knowledge or permission. This I consider the very best authority:

"I dress *all* fractures, simple, compound, comminuted, and complicated, *immediately* after the accident if I can see them before the swelling has occurred If swelling has already taken place, be sure that you get the limb rightly and accurately adjusted, and of the exact length, and if you have properly surrounded the limb with cotton batting or very thick flannel blanket, you need have no fear, if you apply your plaster bandages with proper care. If fractures are compound, I then cut as many fenestra in the casing as may be necessary. If I can dress a fracture immediately after its occurrence, I very seldom have to do anything with it for six weeks, or until union is perfect, and a perfect recovery without deformity is the rule instead of the exception as was formerly the case."

OBSERVATIONS ON THE ESSENTIAL NATURE OF DIABETES MELLITUS VULGARIS.*

By A. FREDRIK EKLUND, M. D., Stockholm, Sweden.

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By the most meritorious experimental researches, executed especially in the last decade, for the purpose of investigating the true causes of diabetes mellitus by exact clinical observations and sempulous examinations of the alteration of the nutrition in the diabetic, a great many valuable facts, like the refracted beams of a prism, are gathered; but nevertheless we must even to day complain with Salkowski and Leube, that the disease in question is indeed a dark enigma. On making some concise quotations I will, however, try to show that it is possible by reassembling some of these refracted rays, to establish a basis of argument, and to suggest a theory in most respects satisfying as to the essential nature of the common diabetes mellitus.

This theory I will endeavor to support by my own experience of the disease in question, by microscopical examination of the urine and of the excrements, by an exposition in a few theses of the properties of the yeast-cell, by analogies collected from the pathological histology, the physiology of the vegetables and the special animal parasitology, by my own unassuming but exact experimental researches.

Funke says that diabetes rises spontaneously in men in

*Presented to the Medical Association of Georgia by Henry F. Campbell, M. D., Augusta, Ga.

consequence of pathological conditions which are still unknown to-day. It is evident that these two mysterious causes may be placed under the two categories, local circumstances and personal faults (Tankes), yet before pursuing the development of the matter in this direction, I will relate that the quite fresh urine of the diabetic, gathered on watching all necessary cautions, not to be deceived, contains as a rule yeast-cells, that I believe are secreted from the kidneys in the same manner as all the other vegetable miasms, for example, forula morbillorum, flaxseinders, the micrococcus phthisis irritans, the limnaphysalis hyalina, and so on, when, on the contrary, no one yeast-cell is present in the fæces of the diabetic. Thence I regard as authorized the inference that yeast cells are constantly to be found in the circulating blood, and constitute integral parts of some, or of the most, or perhaps of all the organs of the body of the diabetic. These yeast-cells are identical with the saccharomyces minor, ellipsaideus (and apiculatus).

If we will now make clear in which way the yeast-cells may have entered into the innermost parts of the body, for example in the liver, the experience of Senaton and my own teaches that disorders of the digestion act in many cases an important part to produce diabetes. Cornil and Ranuien tell us that during this acute catarrhal gastritis the epithelium of the stomach is completely detached, and that the superficial net of capillaries shows a very notable distention. It is indisputable that these pathological states of things, on considering, moreover, the considerable accommodative faculty of the yeast-cell and its buds, are local accidents of high importance for the entrance of the yeast-cells in the blood vessels of the stomach, and, further, in the system of the vena pontæ.

In an analogous manner, the infectious diseases, as the

ague, measles, scarlatina, etc., which produce besides an universal debilitation of the organism, prepare the way for the yeast-cells to grow into the stomach as a miasm. That this just now mentioned peeling off of the epithelial cells facilitates the penetration of such extremely minute particles as germs, etc., the pemphigus of the mucous membrane of the stomach gives us an example. Into the cicatricial texture after the superficial ulcerations, Chalvet has observed deposits of subnitrate of bismuth, which were amassed there during the period of the activity of the ulcers. A striking analogy among the vegetables is offered in ripe cherries, whose outside is found everywhere overspread with yeast-cells. It is not before the berries begin to wither and grow musty that the buds of the yeast-cells can penetrate the weakened cuticle and produce the fermentation.

I will remark in passing that if, during the above-mentioned diseases, yeast-cells are observed in the urine, this signifies that the patient is in great danger of becoming diabetic, if he cannot eliminate the yeast-cells as he recovers. The destruction of these can even be effected by apnœa, if they, in their struggle for existence, lose the power to appropriate to themselves the oxygen loosely combined with the hæmaglobulin of the red blood cells. In general, the living plasmas and tissues at the setting free of the red corpuscles have a much greater affinity for the oxygen than the yeast-cells. This explains the great difficulty for these to bud and multiply in the living body. On the other hand, the almost invariably fatal consequences to the human body of the nestling down of the yeast-cells in the liver, where they not only partly prevent the conversion of the grape-sugar to glycogen, possibly even by hastening the blood circulation, but also and especially change the liver-glycogen to grape-sugar, and of their spreading from the liver with

the circulating blood to the other parts of the body, are chiefly depending on the property of their protoplasm to act as an analytical or hydratative jument on the liver-glycogen, arising itself as well, like the fat, by an analytical process, consisting in decomposition of protoplasmatic matter whereas the hæmaglobulin in the blood of the liver probably constitutes the mother substance and of which the glycogen, the urea and the coloring matter of the bile are derived as by synthesis of grape-sugar. In an analogous manner we see in the vegetables, for example, in unripe peas the soluble albuminoid matter, resembling the cerealin of the gluten, produce the conversion of the starch to sugar, and this effect ceases simultaneously with the hardening of the albuminates, when the sugar is converted again to starch.

On the liver-glycogen the yeast-cells exercise their influence so much easier by reason of the abundance of the dissolved albuminates and their derivatives, which deliver an almost inexhaustible material for the production of a diastatic ferment that is formed by means of the exosmatic exchanges through the cellular membrane of the saccharamyces, simultaneously with which the soluble albuminates facilitate the entering of the ferment of the yeast-cells upon the glycogen by the softening of the envelope of the glycogenous cells.

Yet to-day much obscurity prevails on the essential nature and the mode of action of the protoplasm, and the brilliant corpuscles on the germs of the yeast cells, and the divergent opinions conflict with each other as eagerly as at any time, for the superiority. Under such circumstances I will, in order to support my theory, adduce only the following acknowledged scientific truths and facts by approved authorities.

1st. For the transubstantiation of the starch and of the cane sugar into grape sugar within the vegetable and the animal organism, the active substance is a soluble ferment, that is secreted from the yeast-cell and is identical with that which is present in the small intestine of animals, where it plays an analogous part.

2d. The pancreatic diastasis[12] possesses the faculty of metamorphosing to sugar and to dextrine as much as forty thousand times of its own weight of starch.

3d. The completed ferments[13] have a higher organization and operate, according to the opinion of all, more speedily and regularly than the formless, consequently, to convert 40 grm starch to sugar, rather less than 0,001 grm of yeast cells is sufficient, to change 50 grm of starch less than 0 00125 grm of yeast cells is enough, and so on.

4th. It is only the non-growing yeast cell which effects fermentation[14] that is the consequence[15] of the life of the yeast cells without free oxygen, because the yeast cells are active ferments only in the deficiency of free oxygen and cn obtaining[16] as azotic nourishment albuminoid matters, that is to say, the products of metamorphosis and disintegration of these last mentioned, likewise, the easily soluble and diffusible derivatives of the albuminates, for ex: the peptones, diastog and syntonin, finally even allantoin, urea, uric acid and guanin constitute perfectly appropriate aliments for the yeast cells.

5th Sometimes repeated access to free oxygen[17] is in some measure a capital condition for the renewal of the life of the yeast cell, which else dies.

(12) Roberts op. cit., p. 109.

(13) Leon Manchard, Botanique Cryptogamique, Les ferments, 1883, p. 368.

14) A. Hiller Die Lehre von Ler Fantniss, Berlin, 1879, s. 391.

(15) Hiller, op. cit. p. 395.

(16) Hi ler, op. cit. p. 397.

(17) Hiller, op. cit. p. 406.

6th. The fermentation represents in no wise a simple process of vegetation and alimentation of the yeast-cell, but it can under some circumstances show the opposite state of things, viz: from much yeast and hydratate, little glycogen, or from little yeast and hydratate, much glycogen.

7th. If we,[18] to a mixture of yeast, water and common starch which is unboiled, and its cells consequently unhurt, add a very little of an infusion of any corn, it may be however prepared with cold water, we will find, that the soluble albuminoids in this infusion undergo the action of the yeast, and are decomposed from their complicate molecular structure to the condition of a less molecular complexity. In other words, they are less colored and gummous, they are more unstable. This particular molecular modification is the result of the influence excited upon them by the yeast; so altered, these albuminates gain the faculty of penetrating the wall of the starch-cell and thereby to effect the hydratation of the starch.

The sugar is produced by the intervention of the soluble albuminoids contained in the wheaten meal. From this one is authorized to infer, that the yeast-cell alone is impotent to penetrate as far as to the starch in the cell, and that the effect produced by the yeast is only indirect.

This action consists above all, in the change of the form of the soluble albuminoids, and ultimately to let these two penetrate through the walls of the starch-cell.

8th. If we inquire why the sugar in the blood proceeds not further in fermentation, viz: to alcohol, Thudirkum[19] answers: because the blood-serum shows alkaline reaction. The yeast itself is always acid.[20]

(18) Hiller, op. cit. pp. 428-429.

(19) Graham, La Chimie de lapanification inLaneesan op. cit. 15 Decembre, 1881, p. 580.

(20) Thusichum, Pathology of the Urine, London, 1877, s. 428.

9th. The most favorable temperature[21] for the fermentative process is X 25° C. to X 30° C., but according to Marchand,[22] the temperature at which the most protoplasms yield their maximum of activity, varies between X 35° C. to X 40° C.

10th. Saccharomyces dies not away[23] at 113° C. nor at X 130° C.

11th. According to Ehrenberg,[24] a single microb can produce one million of the same sort in a day, and in four days 170 billions, which represent almost two cubic inches.

12th. The yeast-cells[25] destroy the best aliments, and products arise that contain a small quantity of potential energy. The yeast-cells possess at the same time a synthetical and an analytical faculty. In the former case they compose for their nutrition proper proteinic matters of sugar and ammoniac; in the latter case they influence the soluble albuminoids to form a less complicated molecule.

13th. The large group of ferments[26] consists of destroying, consuming cryptogams, which effect combustion by respiration of oxygen. When they are deprived of chlorophyll and can not produce organic matter to live on, and are forced to live at their own expense, and produce hydrates of carbon; everywhere they can find this combination they appropriate it to themselves, cause the host (the organism?) to fall sick, devour him by little and little and turn him into their own substance.

14th. As an evidence[27] that the theory presented in the foregoing paragraph is correct as applied to the saccharomyces, I will quote the following example, as an analogy from the animal kingdom.

(21) Schutzenbergen, les fermentations, Paris, 1879, s. 134.
(22) Helet. Manuel de Chi Organique elementaire, Paris, 1880, p. 656.
(23) Marchand, op. cit. p. 407.
(24) Marchand, op. cit. p. 408.
(25) Marchand, op. cit. p. 16.
(26) Langen Physiologie, Berlin, 188 s. 64.
(27) Marchand, op. cit. pp. 19, 96, 114.

The Sacculina, the parasite of the crab, is in its turn attacked by a parasitic disease, that effects its atrophy, and ultimately its complete destruction. S. Jourdain has sometimes found these sacculinæ in the last stage of pathological regression, measuring only 0,002, or 0,003 m. in diameter, and which were discernible from the young of the same kind, by the blackish furfuraceous coat with which they were covered then.

The stomatonhizce, that is, the root formed prolongations which proceed from the anterior pole of the genital sac of the Sacculina Carcini, appear to be filled up by a Sacchanomyces sharply defined from the Mycaderma vina and the Sacchanomyces cerivisice with which S. Jourdain has compared it. It buds and multiplies as the Sacch: omyces. Further, every one of the poles, which correspond with the longest axis of the cell, can emit a mycelium-shaped prolongation that S. Jourdain has succeeded in following in henerolutive cycle. All the cryptogamic cells, that S. J. has cultivated in the humid chamber in the midst of a saccharine fluid have projected without exception this double prolongation, which to perform an evolution requires possibly a change of the medium. Often these yeast-cells have appeared associated with psonasperms of variable dimensions.

From these general considerations, we are naturally led to answer the question concerning the occurrence of the saccharomyces minor and mipsaidens in the common substrata of material life. Microscopical examinations have brought to light, that these are found in drinking water in Sweden in sundry places where diabetes is observed to occur sporadically, together with greater or smaller colonies of a species of extraordinarily subtle bacillus, whose diameter 0.5 u. and the length of each individual varies from 2 to 3,

4. 5 u., and more. They are articulated and hang together in long rows. If it is to the action of this microb that we must impute the production of acetone in diabetes, or if it together with the sacchanomyces-cells contribute to hasten the decomposition of the albuminoid matters in the diabe tic, it is impossible at present to discuss. The local essential conditions are of course in some measure all the same as those which produce some other infectious diseases, as for example the ague, scarletina and so on. The relative rareness of diabetes in comparison with the just mentioned epidemic diseases, might have its explanation in the great difficulty for the growing yeast-cell to penetrate the normal mucous membrane of the stomach and of the intestines. In the fœces of diabetics I have, as a rule, found no yeast-cells. In the cases in which no saccharomyces-cells can be detected in the urine, the protoplasmatic corpuscles (the brilliant germs) of these, may be observed, surrounded by a little protoplasm. During favorable circumstances, *i. e.*, the presence of urea, oxygen and sugar, the protoplasm is augmented and the germs are enveloped with a membrane of cellulosa.

The "personal faults" play a particularly important part for the production of diabetes. The principal and most frequent are errors of diet, as immoderate eating of amylaceous foods or saccharine fruits, with disorders following of the digestion, and a faulty composition of the blood. and of the other humors of the human body, by the wrong direction of the whole nutrition and assimilation, abuse of spirits. by which the human organism is converted into an acid dough, where the yeast-cells act almost the same disastrous part as the spark of fire in the magazine. want of bodily exercise; profoundly agitating emotions of the mind, and so on. In some places, for example, in Ceylon and Thuringenwald, the

local essential, and the predisposing personal influences are often combined, that is to say, where the inhabitants make an immoderate use of saccharine fruits, whose surface is covered with energetic yeast-cells (saccharomyces apriculatus) diabetes is more frequent.

It is well known that the inuline of the Jerusalem artichoke approaches to glycogen more nearly than any other amylaceous matter. In the digestion of the thin skins of such artichokes at a temperature of X 37°c., together with yeast-cells, their standard of sugar is considerably augmented in a few minutes. Under the same conditions, the rich liver of fresh oysters shows manifest reaction of glycogen or grape sugar. Mild cases of diabetes are cured by means of an exclusively animal diet, much bodily exercise, alkalies, hydrotherapy and sal iodide spirit, ten minims in sweetened water three or four times every day. The severe cases are all incurable, although we know that phosphorus and arsenic annul the function of the liver to produce glycogen. Iodine and many other agents annihilate the fermentative faculty of the protoplasm of the yeast-cells, outside the living organism. *Stockholm, Sweden*, 8 *Skeppsholm*, 19*th March*, 1883

II.—APPENDIX.

CONTAINING THE ACCEPTED THEORIES OF THE PRESENT DAY ON THE NATURE OF DIABETES MELLITUS.

1. The essential cause of diabetes is, according to Funke,[28] the exceeding accumulation of grape-sugar in the blood. This accumulation may take place in different ways. A. It may be produced directly by injections of solutions of sugar in the blood; B. It arises spontaneously inducing temporary unknown pathological conditions; C It appears as consequence of some lesions of the nervous system, and D. As effect of the influence of some poisons on the nervous

(28) Lanesman, Revue Internat. 15 juillet, 1881, pp. 82, 83.

system. Lesion of the medulla oblongata on a fixed spot at the bottom of the fourth ventricle (at the apex of the calamus scriptorius,) cutting through the spinal marrow at different heights, in poisoning with curare, during the simultaneous sustaining of the blood circulation, by means of artificial respiration; yet it is only the incomplete ventilation of the lungs that causes the diabetes (justly and properly a transitory change of urine). It is proved that in all these cases the sugar that is accumulated in the blood is of hepatic origin. But from this it follows as a deduction, that the fore-mentioned diabetic forms depend either[29] on an increased metamorphosis of the already present liver glycogen to sugar, or upon a lowering of such normal forces as ordinarily prevent the abnormal accumulation of sugar in the fluids of the body.

2. According to Claude Bernard,[30] the cause of diabetes is an enhancement sometimes of the whole functions of the liver; sometimes only of the change of the existing glycogen into sugar, in consequence of an active congestion of the liver, depending on a paresis of its vasomotory nerves.

3. Schiff[31] argues that a hyperæmia produced by paralysis of the vasomotor nerves, in any considerable province of vessels causes the formation of a ferment, not to be found in the normal blood, but which in the liver changes the glycogen into sugar.

4. Pettenkofer and Tait[32] declare the cause of diabetes to be the retarding or suppression of the combustion of the sugar produced by normal synthesis of glycogen in the liver, on account of impeded oxidation in the blood; but neither is the burning of the sugar as the fundamental factor to be

(29) Otto Funke's Lehnbuch den Physiologie, Leipsig, 1876.
(30) Eklund.
(31) Funke, op. cit. p. 184.
(32) Funke, op. cit. lor. cit.

admitted, nor has the truth of the several hypotheses, which are suggested to explain the causes of the pretended oxidation, been demonstrated.

5. Tscherinow,[33] who regards the liver to be a sugar destroying organ, whose physiological office is the metamorphosis of sugar into glycogen, maintains the view that in diabetes the energy of the liver in the process of oxidation (more properly, dehydratation, (Eklund), is impaired.

6. According to Pany,[34] the cause of diabetes in men is a paralytic dilatation of the vessels of the liver.

7. Trumet de Fontance[35] infers, that the genuine diabetes is of a paralytic origin, depending on dilatation and hyperæmia of the vessels of the liver in consequence of their deprivation of the contracting stimulation of the vasomoter nerves. It is only a transitory glycosuria, certainly a significant symptom of diabetes mellitus, that we succeed in producing experimentally, but this is never the real constitutional diabetes.

8 Senaton[36] suggests that diabetes can arise from an abnormally augmented quantity of sugar in the chyle or in the vena portæ, or in these two together. This excess of sugar depends on an impeded metamorphosis of the sugar into lactic acid in the intestines, or upon an accelerated reabsorption of the sugar. 2d. The cause of diabetes is an abnormal acceleration of the portal circulation, whence generally more of the ingested sugar derived from starch reaches the liver. From this organ it is transported in the circulation without, to be changed into glycogen: moreover, the glycogen formed

(33) Funke op. cit. lor. cit.

(34) Funke, op. cit. lor. cit.

(35) Senaton, Diabetes Mellitus in Handbuck den Specieller Pathologie un Therapie von Dr. H. Ziemssen XIII.I, Leipzig, 1879, s 484.

(36) Trumet deFontance Pathologie Clinique LeGrand Sympathique, Paris, 1880, 212.

from sugar or other matters is transformed again more speedily and in more considerable quantities to sugar, that is carried away. 3d. The cause is a diminution of the power to burn the sugar, which is introduced in the general circulation.

9. Zimmer[37] directs attention to the fact that hitherto, in interpreting the origin of diabetes, the muscles where glycogen and sugar are formed have not been considered; nevertheless the muscles in repose store up, as we know, like the liver, hydrate of carbon in the form of glycogen, in their tissues; during labor this glycogen is converted into sugar, that is further decomposed into sarcolactic acid, and finally into carbonic acid and water. That the muscle, in its activity, destroys even sugar circulating in the blood, is most evident from the cures that are effected in many diabetics by methodically used bodily exercises.

10. Cantani says that diabetes mellitus is a disease of the nutrition, in which an abnormal production of sugar is formed that is not consumed as fuel in the organism. This resistance that the sugar in diabetes shows against the process of oxydation may proceed from the fact that the ferment which disintegrates the sugar, either is totally absent, or operates in an abnormal manner on the sugar, and metamorphoses it into a combination, in which the existing forces of the organism are wholly impotent to act. According to Cantani, the blood-sugar, the paraglycosa of the diabetic, is different from the normal blood-sugar. Cantani states that the pancreas, even the digestive glandules of the stomach and intestines, are in the first stage the pathological seat of diabetes. It is only indirectly that the affections of the central nervous system can, by their influence upon the chylopoetic viscera, affect diabetes. *Sweden, Stockholm*, 8 *Skeppsholm*, 19*th March*, 1883. *Fr. Eklund, M. D.*

(37) W. F. Lacbisch, Anlertung zun Harnanalyse, Wien und Leipzig, 1881, s. 273.
(38) Lacbisch. op. cit. 213.

A PLEA FOR A MORE GENERAL USE OF ANÆSTHESIA IN NATURAL LABOR, WITH SOME PHYSIOLOGICAL SUGGESTIONS UPON THE RATIONALE OF ITS ACTION, AS A REASON THEREFOR.

By K. P. MOORE, M. D., Macon, Ga.

From the time when the beautiful Helen received from the Egyptian Princess the medicated wine with which she drove sad memories from the minds of her husband and his friends; or the time when Theodoric attempted before the school of Bologna to prepare his patients for surgical operations by soporific inhalations, down to the present day, the literature upon the subject of relief from pain has been voluminous. And it might seem like supererogation to offer any further contribution upon this subject.

But it is not upon the general subject of anæsthesia that I propose to write. It is in behalf of our mothers, our daughters and wives, that I shall ask you to "hear me for my cause, and be silent that you may hear." James Y. Simpson, whose labors in this direction have linked his name with immortality, was the real pioneer of obstetric anæsthesia, and to him we are indebted for a rich fund of early literature upon this subject; and there are now few more readable books than the "Obstetric Memoirs and Contributions," by James Y. Simpson.

Fifteen or twenty years ago anæsthetics in obstetrical practice seem to have been in more general use even than

now, and I had hoped that it would grow in favor and become so universal that wherever the pains of travail fell upon woman, this priceless boon would be invoked to rescue her from its perils and bear her safely over the Scylla and Charybdis of her parturient period. Why this growing indifference? There still hangs over the minds of the laity a fog of superstition and prejudice against the use of this agent in this branch of the practice. We all have a sensitive and delicate regard for our reputation, and it is, I fear, a disposition to pander to the former, and watch with jealous care the latter, that much of this indifference is due. I have yet to find a single instance where the anæsthetic was judiciously administered, that it brought regret to the administrator. The profession owe it to themselves to stand up against this prejudice, and to diffuse intelligent light upon this subject, until the laity shall come to look upon the administration of an anæsthetic in natural labor as much incumbent upon the accoucher as it would be on the surgeon in any surgical operation involving the same amount of pain and nervous shock. It would be considered wholly unpardonable in a physician or surgeon to undertake a surgical operation, involving much less pain, without giving his patient the benefit of anæsthesia.

But it is unnecessary to discuss this feature of the case; Simpson covered it fully over thirty-five years ago. He makes the estimate that up to 1849 "chloroform had been administered in Edinburg to forty or fifty thousand persons without a single accident or deleterious result." If we could know the number of women who have taken anæsthesia in labor since the days of Simpson's enthusiasm up to to-day, it would probably reach millions, and yet, so far as the writer has been able to ascertain, not a single death has occurred that could be traced directly to the anæsthetic. Can as much

be claimed for the simplest medicine known to the profession?

I lay down this broad proposition, viz: If the use of anæsthesia in natural labor is dangerous and unjustifiable, let every man in the profession raise his voice in opposition to it. If it is a boon to the parturient woman, let it be advocated *as such* until brought into general use. In assuming the latter part of the proposition, I shall proceed to give what I feel to be a sufficient "reason for the hope that is within me."

The physiological researches and discoveries during the last quarter of a century, upon the subject of nervous distribution and nerve function, have not only been wonderfully curious and intensely entertaining, but they have been turned, if possible, to a more practical utility than even the discovery of the circulation of the blood. Through this intricate structure we account for many diseases, and understand the rationale of the action of many of our most valuable therapeutic agents which would otherwise remain, to us, a sealed book. It is a well established fact in physiology that the great ganglionic or sympathetic nervous system rather holds, so to speak, an equalizing balance over the various organs and functions of the human system. We know that the involuntary organs, or those farthest removed from the control of the will, are most abundantly supplied and controlled from this system; while the cerebro-spinal nervous system distributes its connections, and rather takes control of the sensory-motor, or voluntary life. The amount of nerve supply, and nerve function to the respective organs, from these to systems respectively, is in direct ratio to the amount of will power exercised over them. It is also a well established fact that the cerebro-spinal nerves are much more readily affected, either by stimulants or narcotics, whether external or internal, than

the sympathetic; and any organ will be quick or slow to respond to these agents, in proportion to the preponderance of nerve influence from these two nervous systems. This can be better illustrated in the case of the eye, by the stimulating influence of light over the alternate contraction and expansion of the pupil. The ophthalmic ganglion sends off a number of ciliary nerves which are distributed to the iris. It is connected with the remaining sympathetic ganglia in the head, and receives besides a sensitive root from the ophthalmic branch of the fifth pair and a motor root from the oculo-motorious. The reflex action by which the pupil contracts under a strong light falling upon the retina, and expands under a diminution, takes place through this ganglia; and consequently exhibits a sluggishness of action caused by the intervention of sympathetic nerve influence. Hence the changes in the size of the pupil do not take place instantaneously with the variation in the amount of light, but always require an appreciable interval of time. If we pass suddenly from a brilliantly lighted apartment into a dark room, we are unable to distinguish surrounding objects until a certain time has elapsed, and the expansion of the pupil has taken place; and vision continues to grow more and more distinct for a considerable period afterward, as the expansion of the pupil becomes more and more complete. On the contrary, if we pass from a dark room into a bright sunshine, we are immediately conscious of a painful sensation in the eye, which lasts for a considerable length of time and which results from the inability of the pupil to contract with sufficient rapidity to shut out the excessive amount of light. Thus we see that where an organ is supplied from both systems, the sympathetic seems rather to hold in abeyance the rapid action which the cerebro-spinal might otherwise exert. The foregoing illustration serves

my purpose in demonstrating the fact that our vital organs may be affected by narcotics and anæsthetics in proportion to the amount and variety of nerve influence exercising control over them. Those supplied most abundantly from the cerebro-spinal will be much more easily affected than those under the influence of the ganglionic. Our every day observation confirms this physiological doctrine; for if it were not so, then it would be hazardous to use anæsthesia at all; for we might expect the heart, for instance, which is most abundantly supplied from the sympathetic, to yield to its influence as readily as any other organ. It is an established fact that the uterus, in a natural state, has a large nerve supply from the hypogastric ganglia of the sympathetic. In the gravid state there seems to be a large development of this nerve supply. Leishman very beautifully alludes to the wonderful development of non-striated muscular tissue during the term of gestation, from the primitive muscular elements of the unimpregnated uterus. This development of muscular tissue may seem curious and unnatural, yet it is true; and Dr. Robert Lee, in his beautiful anatomy of the gravid uterus, shows also a wonderful development of nerve supply and consequent nerve control, from the great ganglionic system. Passing from this organ towards the vaginal outlet, we find in the cervical canal decidedly more cerebro-spinal nerve influence, while the vagina, sphincter vaginæ and perineal muscles comes more directly under the care of the cerebro-spinal. Hence we find these external muscles are more or less under the control of the will, and contract measurably in response to the will.

From what has been said as to the susceptibility of these two nervous systems to anæsthesia, and as to the nerve supply to the organs and parts involved in parturition,

what effect might we reasonably expect to result from a judicious administration of an anæsthetic in labor? The answer, of course, naturally comes to every one; nor is the answer merely theoretical. Every man with experience will testify that where there is a rigid os and an unyielding sphincter and perineal region, labor is always hastened by putting the patient slightly under an anæsthetic. If, then, good may be accomplished by anæsthesia under the circumstances just mentioned, would not sound medical philosophy make it also true as to any condition of the external genitals? There is no question in my mind but that where the anæsthetic is properly used, labor may always be hastened, and rarely, if ever, retarded by its exhibition. I grant that if complete anæsthesia be induced, possibly the progress of labor may be interfered with, and may become measurably dangerous; but such a condition is unjustifiable with the parturient patient. By careful watching we can induce just such an external outlet, and also at the same time so obtund the sensory nerve influence and consciousness of the patient as to take away her intense suffering without in the least interfering with the action of the uterus or militating in any way against the successful and happy termination of her labor. It might be claimed that if we use sufficient anæsthesia to produce perineal relaxation we would lose the voluntary effort of the patient; but such is not true, for we frequently find the patient making all necessary voluntary effort, when the consciousness was so far gone as to make her insensible of her surroundings.

Contrasting the indications for the use of anæsthesia in midwifery practice with that of surgery, I shall copy largely from an able paper presented by Dr. D. M. Barr, of Philadelphia, to the Obstetric Society of that city in 1880. He says: "A proper anæsthesia is as directly indicated and is

more safe in its use to the obstetric patient than the surgical patient, case for case. The surgical patient approaches the table in varying stages of disease, whereas the obstetric patient approaches her labor in varying stages of health. He expects to awake from his sleep with a mutilated body, perhaps with loss of members or a lingering suffering. To awake for him is, at best, to weep. She, on the contrary, looks upon this sleep as a heaven-sent haven of rest; on the borders of this sleep she lays her burden down; she wakes to receive her reward. She seeks this sleep a suffering woman in travail; she hastens to awake a happy mother, reaping the fruits of her suffering and patience during the long past months, in the fullness of joy, such as a mother only can know. To awake for her is to welcome her harvest home. The surgical patient comes, subject to the shock of sudden accident, or worn by lingering disease, the nervous system all unstrung; she in the height of highest vitality, for never is a woman's life more perfect than now. If she have a tendency to anæmia of the brain, it is least now, her blood being as rich as possible now, and surging through her brain never so high. If the surgical patient have valvular disease of the heart, requiring highest vitality of system to keep in regular action, how is this vigor lessened now; how great is the tendency of chloroform still further to increase the demand. Whereas, when she comes into labor with valvular disease, instead of previous exhaustion and debility, her heart is stimulated by her condition, excited by her surrounding circumstances, by every act of preparation, by every hope. Urged to its utmost power by each recurring pain, by the violent muscular effort, its danger is from over-action, from over-exertion, lest its walls or its valves give way. How appropriate here comes in the soothing sedative influence of the anæsthetic, quieting the excitement, subduing the

pain, lulling into gentle slumber. The scene of labor is gone, the woman bides her time in happy unconsciousness, the heart resumes its normal pulsation, safe under proper care. Even in the uremic poisonings (that night-mare of the obstetric condition), let the onset be anticipated, let the nervous irritability be lost in gentle slumber and the time for spasm may pass unheeded, the signal may never be given. I appeal to the experience of the profession, does any one know of an instance in which a patient has passed from a state of proper anæsthesia into convulsion? For myself I never saw it; on the contrary, I have seen the threatened spasm abort and never return.

It is the habit of the profession after the onset of convulsion to fly to chloroform and the lancet. Why should not the early use of the former do away with the demand for the latter? We may deduce from the foregoing that in the ordinary surgical operation the death tendencies are from shock, from anæmia of the brain, and from general and special debility, while we know that the death tendencies from chloroform are exactly upon these same lines. On the contrary the death tendencies of a parturient condition are from over-exertion or consequent reaction, from plethora, from congestion of the brain, from convulsion; the tendencies from chloroform being all antagonized to these same; and, as two waves meet produce a calm; as oil upon troubled waters give peace, so it is with anæsthesia in labor. Nor is this all. While the *pains* per se in each case may be unbearable, and equally require anæsthesia, the *cause* and *condition* of the pain may vary absolutely. In the surgical operation we have the flesh incised and the nerves divided; it is a concentrated localized pain of great intensity; to subdue the knowledge of this pain requires absolute snoring anæsthesia. On the contrary, in labor there is no sudden

division of continuity of tissue; this is the pain of horrible cramp—it is the pain of muscular contraction – the resistance of muscular tissue against inordinate distention. It is the torture of the rack, and such is its fearful power that in the tearing asunder of the distended parts, as of the perineum, the very laceration brings relief, as though the gates of paradise had opened to give the weary one rest. And yet under a very slight anæsthetic effect, long before the snoring sleep announces complete and profound anæsthesia, the muscles relax, resistance ceases, the parts distend to their utmost capacity, while the consciousness is lost in a dream. * * * And further still, as a measure of safety in favor of the obstetric use, let it be remembered, the ordinary surgical patient, under this profound anæsthesia, is always bordering on the verge of death; he has within himself nothing but his own weakened life force to support him; sinking must be met by flagellations, by shock from the battery, by ammonia, by inverting the body, that blood may gravitate to the brain. Whereas in the parturient patient we have all these substitutes within the citadel; the natural forces then in fullest exercise, acting as a guard against possible accident; the constantly recurring pain serves for the battery, the ammonia and the flagellation, while the muscular exertion, compressing the lungs, forcing the blood into the brain and holding it there with vigorous effort during the pain, answers in advance for the tilting of the body (so often tardy), in all cases where the anæsthetic is administered with only an approach to proper care. Certain it is that any woman can be chloroformed to death, as she may be smothered to death by placing a pillow over her mouth and holding it there; but I am thoroughly convinced, and I trust I have shown some good reasons for believing, that far beyond the average of ordinary surgical

cases in which they are usually administered, the necessary and proper anæsthetic effect is safe in labor cases.

But the question as to anæsthesia in labor involves besides the foregoing, the question as to its effects upon the child. If its delicate life be endangered, then falls the entire argument. But I have no hesitation in asserting the contrary to be true. For myself I have never seen the least untoward symptom with the child attributable to the anæsthesia. Before beginning the preparation of this paper I addressed notes of inquiry covering the whole question of anæsthesia to a number of prominent obstetricians in this country, among whom were Taylor, Barker, Thomas, Wallace, Barr, Opie, Eve, Taliaferro, Powell, and others; and upon this question of safety to the child, all of them who honored me with replies agree that where the anæsthetic is properly used no harm can come of it.

One other vital question in the discussion of this subject is, Does anæsthesia increase the risk of post partem hemorrhage? A casual survey of the authorities would seem to give the weight of evidence on the affirmative side; and yet if we scrutinize it more closely, we will find that if the anæsthetic influence is not carried beyond the point indicated in this paper, the preponderance of evidence as to its increasing post-partem hemorrhage would be decidedly upon the negative. Most of the distinguished gentlemen referred to above think that if *complete* anæsthesia be induced it might increase the risk of hemorrhage, especially in patients whose previous confinements show a predisposition to it. This sentiment I indorse, purely upon theoretical grounds; for, in sixteen years of constant use of anæsthesia in my obstetrical practice, it has been my good fortune never to have had a case of post-partem hemorrhage that I felt could be traceable to the anæsthetic. And the most

fearful hemorrhages that it has ever fallen to my lot to encounter, have been with patients to whom no anæsthetic had been given. My able and venerable co-partner, Dr. D. W. Hammond, of this city, whom I regard as good authority and who, being contemporaneous with Simpson, has had a long and ripe experience, assures me that he has never had a case of post-partem hemorrhage that could be traceable to the use of anæsthesia, and he does not believe that it will have such an effect when its use is kept within due bounds.

What is the best anæsthetic? With a few exceptions I have rarely ever used any other than a pure article of chloroform; and have always felt, with Lyman and others, that it is par excellence, the obstetric anæsthetic. Dr. Isaac E. Taylor, in a recent private letter, says "that he always provides himself with both chloroform and ether; and when the chloroform seemed to arrest the pains, as it sometimes would, he would resort to the ether, and *vice versa*, and have often seen good results from thus alternating with these two remedies." I have never had occasion to use them as suggested by Dr. Taylor, but considering the high authority from whom the suggestion comes, it commends itself to our favorable consideration. The convenience of the chloroform, the agreeable effects of its inhalation, the rapidity of its action, combined with the very slight degree of change which accompanies its use, all unite in maintaining for this elegant preparation the very first place among anæsthetic agents in this department. When, however, the graver operations in midwifery call for complete or prolonged anæsthesia, sulph. ether might be substituted. Chloroform, ether and alcohol have been highly commended as the very best obstetric anæsthetic used in the proportion of one part of chloroform, two of alcohol and three of ether. In the paper of Dr. Barr before alluded to, he so beautifully advo-

cates this combination, that I shall beg indulgence to reproduce his own language upon the subject. He says the peculiar effects of chloroform are: 1st. It has the power to subdue pain by its effects upon the nervous system, independent of its influence upon the blood—acting as a narcotic. 2d. It is by far the most powerful and prompt in its effects. 3d. It is the most dangerous after a slight stimulation, often wanting, and a slight nausea, very often absent. The tendency to paralyze the nervous system is at once manifest; first the sensory, then the motor nerves, then the functions of life succumb. With it the immunity from pain precedes the stertorous sleep; a tendency to produce anæmia of the brain distinguishes it from ether or alcohol, as well as the fact, well established, that it may without warning paralyze and arrest the action of the heart and lungs. With it the stage of inebriation is slight or wanting. In ether we have almost the opposite of chloroform. In its approach to anæsthesia, we have, 1st. A long stage of inebriation, with nausea and vomiting, and with excited spasmodic efforts, often requiring strong hands to restrain. 2d. Perfect immunity from pain with ether, exists only in the stertorous sleep, after a long and tedious administration. 3d. The heart and lungs are stimulated, the brain and general system congested. The anæsthetic influence is induced only through the blood, and in the following stages: 1st. Inebriation; 2d. Stupor; 3d. Muscular relaxation; 4th. Stertor; 5th. Coma, if pushed too far. Now what are the indications in the obstetric condition? First, we have a sudden onsetting pain of great violence; accompanied with this pain, we have a muscular effort involving all the muscles of the body; a straining effort threatening injury to the valves of a diseased heart, or rupture of vessels of a delicate lung. We have this effort forcing blood into the

brain and holding it there, maintaining a temporary mechanical congestion of the brain. We may at the same time have rigid spasm of the os uteri or perineum, cramps of the voluntary muscles, or general convulsions. Now how shall these indications be met? Without controversy, chloroform stands forth as the remedy, its very points of danger being antagonized to a certain extent by the obstetric condition. Does chloroform promptly subdue pain? Here is a sudden onsetting pain. Does it induce anæmia of the brain? Here is an abnormally, though mechanically congested brain. Does it relieve muscular tension and spasm and convulsion? Here is muscular tension and spasm perfected, with most terrible cramps and convulsions always possible. Does it tend to depress the action of the heart and lungs? Here is the action of the heart and lung stimulated to the highest action by pain, by excitement, by muscular exertion, by nervous irritability. But you say it is dangerous; and I say it is dangerous. Its effects may be in excess of the demand. It may paralyze and arrest the labor. In the absence of pain we want no chloroform. How shall we obtain its benefit without the risk? Now comes ether; evaporating three times more rapidly than chloroform, it brings its stimulating effect to antagonize the ever possible enervating effect of chloroform, without in the least antagonizing the anæsthesia, and its own anæsthetic effect is developed after the force of the chloroform is spent. Its own stage of excitement and nausea is lost in the early anæsthesia of its rival, and its dangerous consequences forestalled. Thus we have, if possible, a perfect anæsthetic agent against a labor pain. But in the absence of pain we need no anæsthetic, and should allow only the slightest possible influence; indeed a pure stimulant is to be desired. Now comes alcohol. Less volatile than its fellows, if ad-

ministered with them, it mainly acts after they are gone. Mixing freely with them it serves to dilute and make more manageable these powerful agents.

One more thought, and I shall feel that I have fully covered the ground. When shall we begin the use of the anæsthetic? Formerly I rarely gave it during the first stage of labor, and sometimes not until the presenting part was pressing against the perineum. I should say that if the anæsthesia had not been given up to this stage of labor, be sure to begin now. If the object in using it is to relieve pain, I can see no good reason for withholding it during the first stage of labor. If kept within the bounds already indicated, nothing is to be feared as to its effects upon the progress of labor, even when continued for a considerable length of time. It is never necessary to reduce the patient to silent insensibility or complete anæsthesia. It should be remembered that there is a point in the proces of anæsthesia where consciousness of suffering is abolished, though the patient is still able to cry out even as if in considerable pain. Beyond this it is undesirable to push the induction of anæsthesia. It is no unusual thing to hear a woman declare at the close of a tedious labor, during which time her complaints have been most volubly uttered, that the whole period had not seemed longer than fifteen minutes. Some of the most happy bed-side scenes of my whole professional life, have been when conducting my patients through this trying ordeal of their lives, upon flowery beds of ease. Not only does the pain and suffering of these dear patients lay upon us the absolute burden and duty of giving them the sure relief which every intelligent physician holds in his hands, but we should educate the people against the prejudices which have shrouded this practice, until they shall come to look upon it as a heaven-sent boon, and until the

lying-in state shall no longer be filled with so many horrors, but shall rather be looked forward to, as it should be, with pleasing anticipations and bright parental hopes; and when the physician shall be summoned on his high and holy mission and be welcomed into the obstetric chamber as a harbinger of peace and joy.

CASES IN SURGERY.

A CASE OF SUCCESSFUL REMOVAL OF A UTERINE FIBROID, PER VAGINUM.

By J. W. FLANDERS, M. D., Wrightsville, Ga.

Until the time of Dr. William Hunter, who wrote about the close of the eighteenth century, the true nature of uterine fibroids was not appreciated. Says Dr. T. Gaillard Thomas, "they were described uder the name of malignant growths, of which they were regarded as a variety." He further says "that it is not surprising that confusion should have existed between these tumors and cancerous growths when we consider that so careful an observer as Ashwell as late as 1844, boldly asserted their identity." Until recently it has not been settled as to the possibility of their undergoing cancerous degeneration. Some very able authors declare that they never do so, while others whose opinions are entitled to equal weight think that cancerous degeneration occurs in rare cases. While such a thing is at least possible, it must not be forgotten that such a change of type is exceedingly rare. But my object in this article is not to enter into the history, pathology, symptoms, etc., of uterine fibroids, but to bring to the notice of the profession a very interesting case which recently came under my care, and was successfully removed by myself and Dr. J. L. Walker, of this place.

On the 12th of February, 1884, I was called to see Miss J.,

a lady of good character, aged 44, of dark, sallow complexion, rather corpulent; always enjoyed good health until June, 1881, since which time she has complained of leucorrhœa, menorrhagia and metrorrhagia; however, not very severe until the latter part of 1883. From the first of November of that year the hemorrhage was generally so severe that she was confined to her chamber the most of the time, and when I saw her in February, in consultation with Dr. Walker, the hemorrhage was profuse and continuous. She complained of palpitation of the heart, and had the appearance of one suffering from anæmia. She complained of backache and dragging pains in the uterus. She was extremely weak, no appetite, and her spirits very much depressed. Upon examination per vaginum, I found the cervix dilated to the size of a silver dollar, and pressing against it a smooth, hard tumor. The uterus being considerably depressed and the cervix lax the finger could be carried high up into it and around the tumor. We prepared an astringent solution, and directed her to throw it into the vagina several times a day for the next two days, for the purpose of arresting the hemorrhage. The astringent had the desired effect, and when we saw her again, two days afterwards, she was entirely relieved of hemorrhage. A digital examination revealed nothing more than we discovered on our former visit. We then introduced a Leonard speculum, which exposed to view a large, smooth tumor of a dark brown color. The sound could be easily passed around the tumor to the fundus of the uterus, to which it was attached by two distinct pediculi. On account of her extreme weakness, and fearing hemorrhage, knowing that she could not bear the loss of much blood at that time, we postponed the operation and put her on tonic treatment, good diet, etc., and directed her to continue the astringent injections to prevent a recurrence of hemorrhage.

By the 25th of March she had improved so much that we decided to operate the next day, and gave her a cathartic, which acted well, and directed her to take teaspoonful doses of Squibbs' fluid ext. ergot, every two hours, commencing at two o'clock a. m., and continue until we arrived the next day at ten o'clock. The ergot acted well, bringing on firm uterine contractions, which forced the tumor down against the perineum. After adjusting the speculum and getting the tumor into it, I attempted to remove it by avulsion. I seized the tumor with a pair of vulsellum forceps, and used firm traction with rotary movements as directed by Dr. Gaillard Thomas, but putrefaction having taken place in the lower part of the tumor, it broke off. Knowing that it was of the submucous variety and attached by a pedicle, I was unwilling to cut it and leave any part of it; but after trying again to remove it with the forceps, with no better success, I decided to cut it with the ecraseur. After passing the chain around it and passing it as far up as possible, I attempted to cut it with the chain, and found it so tough that it was impossible to sever it. I then grasped the chain and stem in one hand, and by firm traction and twisting movements I severed its attachments and brought it all away. We washed out the uterus thoroughly with a solution of carbolic acid; continued the tonic treatment, and directed her to syringe the vagina three times a day with a decoction of linseed and carbolic acid. There was no hemorrhage at all, there being less than an ounce of blood lost by the operation. She had no fever except on the third day, which was light. She rapidly regained her strength, the soreness subsided in a few days, and on the fifteenth day further treatment was deemed unnecessary, and she was discharged.

The following is an extract from a written report made

by Dr. R. O. Engram, of Montezuma, Ga., who examined the tumor under the microscope. He says: "I find it a fibroid tumor of the closest, densest variety, and a very interesting specimen. It has undergone calcareous degeneration, and has some of the characteristics of a fibro-adenoid tumor, but cannot be classed as such."

A CASE OF IMMEDIATE RESECTION, WITH UNION AND SUBSEQUENT LENGTHENING OF THE BONE.

On the 1st of April, 1882, I was hastily summoned to see Henry Braddock, who had accidentally shot himself with a double barreled shot gun. He was a farm laborer, aged 12 years, robust and always enjoyed good health. I arrived at his father's house, who lived about ten miles away, about four hours after the accident occurred. I found him lying on a mattress in the piazza, his side, shoulder and arm saturated with blood; there being no large vessels wounded, the hemorrhage had ceased before my arrival. I was informed that he was standing on a chair with the breech of the gun resting on the edge, and the muzzle against his shoulder; the gun slipped down, both hammers striking the chair, which discharged both barrels, loaded with double B. shot, entering his side and laying bare three ribs a width of about two inches, then passing up without entering the thoracic cavity, entering the axilla just behind the axillary artery and vein, passing through the anatomical neck of the humerus, completely severing it, and terribly lacerating the muscular tissue and some of the ligaments. Upon examination I decided to resect the bone, as there was not muscular tissue enough left to cover the stump in case of amputation. I carefully removed all the lacerated flesh, pieces of gun-wadding and loose pieces of bone, and sawed off the uneven spiculæ and brought the ends of the

bone in apposition, and united the integument with the interrupted suture, leaving sufficient space between the suture to wash out the wound with a solution of carbolic acid, and applied a roller bandage from the hand to the shoulder, being careful that the bandage did not cover the wound. I then applied a cerate composed of simple cerate and carbolic acid in the proportion of one ounce of the former to one drachm of the latter. The pain, which was intense, entirely subsided as soon as the wounds were dressed. The plasters were removed and the wound syringed out with a decoction of linseed and carbolic acid twice a day; the wound on the side was treated the same way. He suffered no more pain during the whole course of treatment except from retention of urine for about one day, about a week after the accident occurred. His appetite was good and his sleep sound and refreshing from the beginning. He had no fever other than that produced by nervous prostration, and that subsided on the fourth day This course of treatment was continued until the fifth of May, at which time the bone had united and the wounds healed. I carefully measured his arms and found the wounded one two inches shorter than its fellow. About eighteen months afterwards he came into my office, and I again measured his arms, and to my great astonishment found the wounded one only about one-fourth of an inch shorter than the other.

I do not claim that there is anything new in the operation or subsequent treatment of the wounds in this case, and it was not for that reason that I thought proper to bring it to the notice of the profession. If the case possesses any interest it is in the fact that two inches of the humerus was taken out, and in less than eighteen months it had grown to nearly its normal length. I cannot believe that the case could have been carried to a successful termination

without pain, fever or some other unpleasant symptom, under any other than the antiseptic treatment. The antiseptic treatment of wounds and injuries is not limited to Listerism or any other special method, but is based upon broad general principles; and whether or not the germ theory is true, carbolic acid possesses other effects than that of an antizymotic. It has been my custom for the last seven or eight years to treat all wounds and injuries with carbolic acid, and in no case have I been disappointed in the result. Recently some very eminent surgeons have recommended some other agents as being superior to carbolic acid. In regard to this I am not prepared to give an opinion. The effects of carbolic acid have been so uniformly satisfactory to me that I have not found it necessary to resort to the use of any other article.

THE TREATMENT OF THE PLACENTA AFTER ABORTION.

By N. G. GEWINNER, Macon, Ga.

There is not a question in obstetrics which has occasioned more discussion during the last year than that of the treatment of the placenta after abortion. Our text books on obstetrics are remarkably silent on such an important question, the majority of them simply directing the physician, after the expulsion of the fœtus, unless the hemorrhage is alarming, to preserve an expectant attitude; to control hemorrhage by the use of ergot, the sponge tent, or the tampon, and to prevent decomposition of the secundines by disinfectant intra-uterine injections.

The results of retention of the placenta are hemorrhage, septicæmia, metritis, cellulitis, peritonitis, sub-involution and death. Phlegmasia, dolens and chorea have also been traced back to retained placenta. These results have been fully set forth during the last year by Mundé, Grandis, Alloway, Farr, Acker and others, and they have urged upon the profession the importance of removing the placenta at once and by the use of instruments, if necessary, as far less dangerous to the life and health of the patient than waiting until the placenta decomposes or comes away of itself. They advise, as instruments to detach the placenta, the placental forceps, the curette, and the finger. To dilate the cervix, if closed, by a dilator or a tupels tent. These views have been opposed by the adherents of the expectant plan and much discussion has resulted therefrom.

Dr. Ahlfeld, of Germany, has recently made some interesting experiments on the absorptive power of the uterus, which have thrown some light on the subject. By using intra-uterine injections of salicylic acid and afterwards examining the urine, he has come to the conclusion that the greatest absorptive power of the uterus is when that organ is relaxed, and that it is greatest from the third to the sixth day.

While recognizing the grave results which follow a retained placenta, yet from my experience, I would prefer a medium course between the expectant and the immediate removal. If there is no hemorrhage I would prefer to wait one or two days, preserving what has been termed an armed expectancy, before resorting to forcible means. According to Ahlfeld, the absorptive power of the uterus is greatest when relaxed. In the case of a relaxed uterus we would very likely have hemorrhage, which would necessitate the removal of the placenta at once, and this could be accomplished without having to resort to a dilator. Then from the third to the sixth day the absorptive power of the uterus is greatest. I would, therefore, see no great impropriety in waiting when there is no hemorrhage, one or two days, to allow nature to remove the offending cause. We may be as wise as it is possible for physicians to be, yet we can but assist nature, we can never take her place.

As Dr. Walter A Colles says, in a paper read before the St. Louis Obstetrical Society, of the doctrine advocating immediate removal, as being somewhat ultra and dangerous in its tendencies and as being too dogmatic and sweeping in character: "Whilst, he continues, the act of abortion is a pathological process, yet, like most other processes, it is amenable to natural laws, which, when properly guided and directed, generally lead to a favorable termination.

Nature may often need judicious assistance, but it is seldom that her powers are so absolutely impotent as to require that they be unceremoniously ignored and supplanted by art." Those who advocate the immediate removal of the placenta in all cases appear to ignore the feelings of their patients entirely.

If we are called to a case of abortion, and find that the fœtus has been expelled, that the hemorrhage has ceased and the uterus firmly contracted, it would be a very painful and tedious operation to dilate the cervix and remove the placenta by means of the curette and placental forceps. The patient would have to be placed under some anæsthetic which would give to the whole proceeding as grave an air as the amputation of a limb, and would, in my opinion, produce as great a shock to the patient. By securely tamponing the vagina with carbolized cotton in such cases, we can leave our patient with safety, and, in nine cases out of ten, on removing the tampon, after the lapse of ten or twelve hours, we will find the placenta detached and protruding into the vagina within easy reach of the finger. I am not in favor, however, of waiting longer than three days. If at the end of that time the placenta should not have come away, we should resort to a dilator and remove it. After the removal of the placenta an injection of carbolized water, very warm, or what is more highly recommended by German writers, a solution of bichlor. of mercury (1 to 100) should be given. These injections should be kept up for several days. If there is still much hemorrhage, the uterus should be swabbed out with tr. iodine and the patient kept on ergot.

I should recommend this course, as we would thereby hasten the convalescence of the patient, and, according

to Ahlfeld, the danger of septicæmia increases after the third day.

Many cases have been reported where the placenta has been retained for weeks and even months with no serious results. Dr. Jepson, of West Virginia, reports a case in the *American Journal of Obstetrics* for October, 1883, where the placenta was retained one hundred and fifteen days after the expulsion of the fœtus, and ninety-nine days without giving rise to any symptom deemed by the patient of sufficient gravity to require the advice of a physician.

And this is not an isolated case. Numbers of others might be given where the placenta was retained for weeks, and others where not only the placenta, but also a dead fœtus, has been retained a long while without serious results.

These cases tend to show that septicæmia is not always a certain result of retained placenta. To recapitulate: I should deem it my duty, when called to attend a case of abortion, to remove the placenta as early as possible without resorting to forcible means. Should the placenta be adherent, or the patient too much weakened by the loss of blood which she has suffered, I should give ergot in full doses and tampon at once; renewing the tampon every twelve hours, after washing out the vagina, until the placenta comes away, or until the third day, when I should resort to instruments to remove it.

This plan would be a medium course between the immediate removal and the expectant, and would insure against undue haste on the one hand and a too tardy action on the other, and would most conduce to the welfare and speedy convalescence of the patient.

Whilst the removal of a retained placenta by delicately scraping out the uterus with a curette may be a very simple operation to the specialist, yet to the general practitioner

the removal of a retained placenta is not such an easy matter, and where one case of abortion is attended by a specialist, there are one thousand that are attended by the general practitioner. Hence I claim that a medium course will give the best results to the general practitioner, who must bear the greatest burden not only in attending cases of abortion but in every other ill that befalls suffering humanity. Yet I honor the specialist, who, laying aside all else, devotes himself entirely to one branch of our profession, working with energy and zeal to improve himself and also advance the profession at large by his research and study.

It is the specialist to whom we are indebted for the larger number of our improved instruments. Particularly is this the case in the field of obstetrics and gynecology.

It is to the careful research of the specialist that many errors have been swept away. They study disease, however, under different surroundings to their brethren of the country and smaller towns. The home of the specialist is in our larger cities, where the crowded tenements, narrow streets, impure water and air render the patient more liable to septicæmia and other blood poisoning. Hence their experience of septic trouble in cases of retained placenta cannot apply with as much force to us practicing in a purer atmosphere and with more favorable surroundings.

We should exercise every care in attending cases of abortion. Adopting a medium course and managing our cases with wisdom and moderation, we have every hope of conducting them to a happy termination.

THE USE OF GELSEMIUM SEMPERVIRENS.

By T. L. LALLERSTEDT, Panola, Ga.

It is unnecessary for me to go into a full botanic history of this beautiful plant that grows wild in all parts of Georgia and most of the Southern States. I shall confine myself to its employment in medicine. I have for the last twelve years never been without it in my office or in my saddle-bags. I can find a larger range for its use than any one drug that I know. It has two unmistakable effects on the patient, and it can be stopped at once when these effects are produced. One is double vision, and the other inability of the persons taking it to keep their eyelids open. While they do not care to sleep, the lids will close in spite of their efforts to keep them open. There are no bad effects that follow taking it, as there is in veratrum viride. I frequently combine it with bromide of potassium and other medicines.

In facial neuralgia it is almost a specific if used in large doses, but if taken as most writers direct, it is of little value. I give the fluid extract in twenty to forty-drop doses in a little water every two hours until the therapeutic effects are produced, or relief is obtained. In severe frontal headache, I give in combination with bromide of potassium, using the following: ℞. pot. brom. grs. xl. to lxxx.; F. E. gelsemium, gtts. xx.; to be given in a full glass of water every hour. I use it in place of opiates of any kind, for the reason that the effects are more lasting, and no sickness follows. I have used it with considerable success in gonorrhea, both acute and chronic, in doses of fifteen drops ev-

ery four hours. In infantile convulsions I know of nothing that can fill its place; and in fact in all convulsions.

I will give two cases of puerperal convulsions. I was called September 10th, 1880, to see a negro woman who had been in the care of a physician twenty-four hours, and he had left her, saying she must die. When I arrived she was in a convulsion. I learned that the intervals were from five to fifteen minutes. I at once attempted to bleed her, but the convulsions were so frequent I almost failed. I could see no benefit from the bleeding. Chloroform had been effectually tried and failed to relieve her. I then injected into her left arm fifteen drops fluid extract gelsemium, nine drops veratrum viride with a few drops of water. She never had another convulsion. Her child was born forty-eight hours afterwards. The pulse in left arm was so small it could scarcely be found, while that of right arm was sixty, full and strong. She recovered.

I was called to see Mrs. O. on December 29th, 1881, and found her in labor, everything progressing nicely. When the head of the child began to press upon the perineum she went into convulsions. As soon as she could swallow I gave her twenty-five drops fluid extract gelsemium, and then delivered her at once with instruments. She soon had another convulsion, and I gave twenty-five drops more. In about two hours she had a third one; it was light; I gave another twenty-five drops, and that was the last of her convulsions.

In all fevers excepting typhoid, I find it preferable to anything else to reduce pulse and keep it down In kidney affections, congestion, etc., or as a diuretic, it is excellent. One case, Mr. D., was treated by myself for congestion of the kidneys. He afterwards moved to Texas, and was again taken with the same trouble, and was treated for six

weeks, but was unable to attend to his duties. He wrote to his father to see me and get the prescription he had taken before and send it to him. It was sent; there was only one druggist in his town who would fill it, and he remarked: "The doctor who wrote it did not know his business." The following is the prescription: ℞ fluid ext. gelsemium, ʒii; Dose, fifteen drops every four hours, last dose to be taken on going to bed. He was attending to his business in less than a week after beginning the use of the prescription.

In all cases of palpitation of the heart, from whatever cause, it will quiet it. I could put on record innumerable cases, but it is useless I will give one among the worst cases I have used it in.

I was called, December 10th, 1883, to see Miss S.; found her sitting up and breathing rapidly and laboriously. She had general dropsy; not much appetite; bowels moved daily; urine scanty and highly colored; unable to lie down to sleep; had not had a good night in six months. I put her on the following treatment:

℞.—Fluid ext. gelsemium, ʒiv;
Fluid ext. digitalis, gtts., lxiv;
Bromide potassium, ʒi;
Nit. potassium, gr. clx.;
Water q. s. ad. Oi. Mix.

Dose—A tablespoonful every four hours in half glass of water.

After taking four doses, she was able to lie down and sleep; her heart's action became quiet; urine increased; dropsy disappeared; appetite became all right, and she is well at this time.

I frequently combine with it tr. opii. in equal parts, mixed with the yolk of an egg, with two teaspoonfuls of sugar, and use it as a cough mixture.

The largest quantity I ever knew to be taken at once was one hundred and twenty-five drops, and that was done by mistake of the nurse, and it happened while I was in the house. A negro woman had remittent fever. I gave twenty-five drops, and prepared seven doses of fifteen drops each and placed on the table, and while I was attending to something else, the nurse gave seven doses. The fever promptly subsided, and there was no bad result from the overdose, that I could see.

A NEW MAMMARY BANDAGE.

By W. B. PARKS, M.D., Atlanta, Ga.

I cannot say as to others, but as for myself there has been a constant demand of me since I have been in practice, to get something or do something to prevent mammary abscesses and to support the mammary glands which are large and heavy in some patients. It is a well known fact that compression will sometimes prevent an inflamed breast from suppurating, or abort an abscess, or, as the old ladies say, stop the breast from rising. I am satisfied that every practitioner has had many such cases to treat. Adhesive plaster is a very good appliance, and has been frequently used for this purpose. But it has some objections that each one has no doubt experienced who has applied it: it is very difficult to apply and adjust properly, and if worn for quite a while it will cause an itching and burning sensation that is very unpleasant; and even after suppuration, the gland needs support and compression, and then it is impossible to apply the adhesive plaster. The "four tail" bandage has been used, and is a very good appliance, and does away with the objections of the adhesive plaster; but it has some objection. It is easily made but difficult to apply, except by a physician; at least I have found it so, and I have applied it quite a number of times. You are obliged to have the lady strip to the waist that you may apply it correctly, and if there is much tumefaction when compression is made, in a few hours the bandage will get loose and the gland

will slip down, and you cannot adjust it unless by taking the clothes off to the waist again; hence that makes it inconvenient, and with but few exceptions you cannot instruct a nurse to apply it correctly, nor can you make application to the breast so well; hence these inconveniences ought to be overcome, and I think they are in the bandage I now show you. The material of which this bandage is made is unbleached domestic. It is made as follows: One bandage about thirty-six inches long and ten inches wide; this goes around the waist just under the mammary glands and fastens behind with buckles or pins; this is doubled, which makes a five-inch bandage around the waist; now commence at each end of the bandage, in the center cut eleven inches, which leaves a flap that turns up and comes to top of each gland, making that flap fourteen inches from side to side of each gland; cut this flap down to a common bandage, which will leave seven-inch flap to each gland. As a square flap will not fit a round gland, commence in the center of the top of each flap, cut down towards the common bandage until you cut far enough to pass the nipple—this will let the nipple through,—lap each of these flaps about an inch—this will make it cone-shaped to fit the gland; fasten a narrow strip of cloth about as wide as a suspender to the top end of each flap; draw the suspender over the shoulder and fasten with a buckle. When required you can make the adjustment at the lap end of the flap, so that the lady, when she wishes to, can tighten the bandage by opening her dress in front as if she were going to nurse her child. If you wish to use more compression than you get by tightening up the suspenders, you can fasten, also, another strap half way on each edge of seven-inch flaps, and bring around the body and fasten; this will give compression both from front and sides. You can now see at once the advantage of this bandage;

you get all of the compression necessary, and you get a good and easy support for one or both glands. When you fasten the bandage on it is permanent. It is adjusted simply by tightening the shoulder strap. This bandage can be used in all cases where the breast, from any cause, requires support.

NOTE.—I will send a pattern of this bandage to any one who desires it.

ASTHMA AND ITS TREATMENT.

By T. L. LALLERSTEDT, Panola, Ga.

Asthma is a disease that all general practitioners are called upon at times to treat, and the treatment, according to the authors which I have, is at least very unsatisfactory. The causes are various. Prof. Flint says of those who become asthmatics: "So large a proportion have had parents or progenitors endowed with same peculiarity of constitution that there must be admitted to be in some cases an inborn and inherited predisposition. The fact of it being congenital is also shown by the occurrence of the affection not infrequently in early childhood and infancy."

Prof. Henry Hartshorn says: "Asthma is hereditary. In a majority of cases it is more frequent in males than females. It may occur at any age.

CAUSES.

-"Fogs, fumes of various things, ipecacuanha, mustard, new hay, etc. 2d. By reflex action, as irritation of the stomach from indigestion, loaded rectum, sudden emotion. 3d. By pulmonary or cardiac disease. Behind all these there must be a predisposing peculiarity of constitution."

Prof. George B. Wood says cold is probably the exciting cause. It seldom produces death. The treatment is unsatisfactory.

The writer has been subject to asthma for the last ten years, brought on by over-exertion and excitement. After suffering a great deal and trying many remedies, with but little relief, I happily put together the following formula, and have since used it in all cases that I have treated:

℞.—Iodide of potassium, ʒi;
Fluid ext. gelsemium, ʒvi;
Fluid ext. belladonna, gtts., clx;
Water, q. s., ad., ʒiv. M.

Dose—A teaspoonful every hour in water until relief is obtained, or the physiological effect of the drugs is produced. If relief is not obtained as soon as the first effects of the remedy begin to disappear, its administration should be resumed and continued as at first.

As a preventive, take small doses through the day, and if attack has no regularity, take a good dose on going to bed every night. I could give a number of cases entirely cured and others relieved by taking a single dose. I consider it useless to give cases; try it and be convinced. A very important factor in this treatment is to keep the bowels in good condition with small doses of pulv. opium, if necessary. If the patient suffers very much, strong tincture of iodide painted over the tract of the pneumogastric nerve will greatly assist in giving relief.

DIET IN CONSUMPTION AND OTHER MORBID STATES AND PROCESSES, IN DISEASES OF THE GENITO-URINARY SYSTEM, TO WHICH IS ADDED SEVERAL RECIPES FOR THE PREPARATION OF ANIMAL FOOD.

By R. J. NUNN, M. D.,
PHYSICIAN TO THE FEMALE DEPARTMENT OF THE SAVANNAH HOSPITAL, SAVANNAH, GA.

The morbid states or processes, which are either in themselves diseases, or prepare the system for the invasions of many maladies, are oftentimes so intimately associated with affections of the genito-urinary system that it is almost an impossibility to successfully treat them as a class without at the same time giving attention to the other. Prominent among these pathological conditions is the one usually known as consumption. Of necessity, therefore, the discussion of the effects of diet and of the mode and manner of nourishing patients, male or female, suffering with affections of the organs of the genito-urinary system brings forward an analysis of the causes which predispose to consumption and suggestions as to its treatment. Taking this disease as a well-known type of the morbid states dependent upon, or resulting from, disturbances of the functions of the genito-urinary organs, it is evident that the successful medication of the one will demand a close examination of the other. They cannot be disassociated; and as the first step in the downward march is through a nervous reaction upon the

stomach and digestive system resulting in deficient nutrition, a veritable starvation process, the so called dyspepsias will first demand our attention.

A very remarkable observation is that made by Mr. Sutton during his researches on tuberculosis in birds, to the effect that he met with no case of tuberculosis in those birds subsisting on fish. It is to be hoped that this hint will not be thrown away, and it may be that the brilliant effects of a meat diet may be eclipsed by those obtained by living exclusively on fish.

OVARIAN DYSPEPSIA,

Is the very suggestive title of a most instructive paper by Dr. Fothergill, in which (*American Journal of Obstetrics*, vol. xi., p. 11, 1878) the author shows conclusively that dyspepsia, mal-nutrition and phthisis follow closely as effects upon ovarian irritation, that vascular excitement, of one or both ovaries, usually the left, which Barnes has called "oophoria."

Much that is exceedingly instructive upon the same subject, and very readable withal, will be found in "Indigestion and Biliousness," by the same author, and also in the *Practitioner's Handbook of Treatment.*

The distinguished author just referred to, concludes his paper thus: "So frequently does dyspepsia in women depend casually upon ovarian mischief that the writer now always commences eliminating the ovarian factor before treating the malady as a pure stomach affection."

FOOD IN OBSTETRICS AND GYNECOLOGY.

An eminent English gynecologist, speaking upon this subject, says:

"*The question of Food in Obstetric and Gynecological Practice by Graily Hewitt, M. D., British Medical Journal, 4th August,* 1881, *p.* 224, *et seq.*

"With very few exceptions, and those exceptions tending to prove the rule, it is, I hold, impossible to find patients suffering from chronic uterine disease who have not undergone, at some former period, what may be termed a starvation process; and careful inquiry generally elicits the fact that quantitative deficiency in the diet extended over a considerable period. In many cases the patients are found to be still under the influence of a deficiency in this direction, and to be 'eating,' as the expression is, 'next to nothing.'

"I have been much interested in observing also the effects of previous insufficiency of food in apparently predisposing patients to attacks of puerperal septicæmia. In the cases of this disease, which I have seen in consultation, I hardly recollect having seen a case where the patient so affected had, during pregnancy, lived fairly well; and the worst cases have been those in which the patients fed badly and insufficiently during the pregnancy, and had been fed on a gruel diet after the labor was over. In cases where the severe sickness during the early part of the pregnancy prevents the proper nutrition of the patient, the system is liable to become much impoverished, and an insufficient dietary may be, and often is, the preliminary to a dangerous childbed."

DR. ABERNETHY'S APHORISM.

The language of Dr. Abernethy to General Dix, as given in the biography of the General, is most expressive, and deserves to be made the rule of life of every human being:

"You must take regular exercise, as much as you can bear without fatigue, as little medicine as possible, of the simplest kind, and this only when absolutely necessary, and a mod-

erate quantity of plain food of the quality which you find by experience best to agree with you. No man, not even a physician, can prescribe diet for another. 'A stomach is a stomach,' and it is impossible for any one to reason with safety from his own to that of any other person. There are a few rules which any man of common sense may learn in a week—such as this: That rich food, high seasoning, etc., are injurious. I can say no more to you, sir; you must go and cure yourself."

PHTHISIS.

"The study of tuberculosis is more than ever the fashion of the day. Whether we admit or not the parasitic theory of Dr. Koch, everybody is agreed that the question of aptitude and of constitutional condition, is of prime importance. This aptitude, so justly characterized by Bonchardat under the name of physiological depravity (misére physiologique) may create the soil favorable for the culture of the microbe, (new view), or occasion the spontaneous development of phthisis (old view).

"The essential condition of all treatment, preventive or curative, consists in the abolition of this wretched physiological state, by restoring the forces of the economy through hygienic means. This is a truism which is brought into new light and prominence by the surprising results recently obtained by Debore and Dujardin-Beaumetz by means of forced alimentation. It is, however, to be regretted that forced feeding by means of the sound (gavage), meets such numerous difficulties in private practice.

"It is evident in treating this grave malady, especially when the tuberculosis is not extensive, and when you wish especially to combat the predisposition, the *misere physiologique* (to again quote Bonchardat's happy term), the first thing is to promote a high state of nutrition. Everybody

knows the difference which exists in the progress of phthisis between the patient who eats and the patient who does not eat." (*Therap. Gaz. vol.* 2, *p.* 52.)

"There are a number of ailments which, from the experience of clinicians, are known to have a great direct or indirect influence in the development of general tuberculosis and pulmonary phthisis, or are known to create conditions of the system that predispose it to this malady. Such are syphilis, inflammation of serous membranes, bronchitis, croupous pneumonia, diabetes, the exanthemata, especially measles and typhoid fever, deformities of the skeleton, rickets, cerebral and spinal diseases of various kinds, dyspepsia, the puerperal state, uterine diseases, prolonged nursing of children, onanism, change of climate, continuous loss of sleep, distress, etc.," and I would add chronic urethritis, stricture of the urethra, chronic prostatitis, and excessive venery.

"It is an established clinical fact that phthisis is extremely rarely, if ever, associated with mitral heart disease; and, from my own observations, I believe that phthisis is rarely coincident with tumors."

"Schottelius made recently some interesting observations concerning the mode of termination of the smallest bronchioles and their relation to the lung acini in different animals. He found that in the carnivora the entrance of the bronchioles into the acini presented very small apertures, so that the air-vesicles were not easily accessible to irritants; while in the herbivora the terminal bronchial terminations were quite wide, thus permitting the free entrance of irritants. He states that in man the bronchial terminations, congenitally approach sometimes those of the carnivora, and sometimes those of the herbivora. In the latter type, he believes to have found an anatomical explanation for the predisposition

in some individuals to pulmonary tuberculosis. Weigert, of Leipsic (one of the most enthusiastic germ theorists), properly remarks upon the observation of Schottelius, that it does not explain the predisposition, as the same animals will react upon the introduction of the "poison of tuberculosis" into any other part of the body where the bronchioles do not come into play. Koch asserts that the structural peculiarities of the tissues which I described can have no œtiological relation to tuberculosis, because an animal not possessed of such tissue peculiarity—the cat - is easily inoculable by tuberculous material."

"Here I must differ from Koch, as in my experience with cats, this is not the case; and, again, Koch brings no proof for his assertion, and I am unaware that he, or anybody else, produced tuberculosis in a cat, except by inoculation into some serous cavity."

"It is well known that there may be primary tuberculosis of serous membranes producing secondary inflammations; and on the other hand, tuberculosis secondary to adhesive pleurisy or peritonitis is also common in serous membranes. The general belief, however, is that whenever terbercular disease in either case occurs, if not secondary to phthisis or tubercular disease elsewhere, a strumous or scrofulous condition is required."

"Traumatic injuries of joints are known to lead often to fungoid (tubercular) synovitis and general tuberculosis, occasionally in individuals with good family history. Simple injuries of the eye-ball (the anterior chamber as well as joints is lined by serous membranes), under conditions as above stated, have also been known to lead to tuberculosis, as recorded by Wolfe." (*British Med. Journal, March*, 1882), Gradenigo (*Annale d'Oculistique*, 1870.)

"Cases which came under my observation during the last

eighteen months, i.e., since the opening of the bacillary campaign, were, of course, carefully examined for bacilli, and the results may be summarized as follows: Bacilli were found in most of the lesions if the tubercular disease of serous membranes was accompanied by cavities and cheesy masses in the lung, or by tubercular ulceration of the intestines, and if cheesy changes in general were prominent; but no bacilli could be discovered, even after repeated and careful search, in any of the lesions of four cases of primary peritoneal and pleuritic tuberculosis examined. In none of these latter four cases were there any conspicuous cheesy changes in any organ, and no cavities or marked hepatizations in the lung and no intestinal ulcers, although in two there was slight pulmonary miliary tuberculosis. I have also seen several cases of primary tubercular pleurisy and pericarditis, and a few of primary tuberculosis in the pathological institutes of Virchow in Berlin, and of von Recklinghausen in Strasburg. I questioned these foremost men of pathology concerning the œtiology of these lesions. They, as well as Rindfleisch, of Wurzburg, told me personally their opinion, stating their firm belief that these lesions often directly originated from simple chronic inflammatory changes, without the agencies of any cheesy focus, or any specific agencies whatsoever."

Birch-Hirschfeld also states, in his classical pathological work (page 183), that "nearly every exudative pericarditis and pleurisy leads to a local tuberculosis, if it takes a chronic course." A gloomy prognosis should not be given in early phthisis. It is astonishing what a large number of healed cavities and cicatrices in the apices of lungs are found on the post-mortem table, indicating the healing of phthisis in persons who long subsequently died from some other causes in later life. We have seen that tuberculosis manifests itself

quite differently as to structure, appearance, distribution and termination in the various animals, and even differently in the various organs of one individual. Our studies have shown that these variations in the expression of tuberculosis depend upon the structural peculiarities of the various kinds of animals, and sometimes even upon the difference of the structure in animals of the same species. We have also seen that even in human beings tubercle tissue may manifest itself in various forms. In some individuals it develops rapidly, and spreads over large areas, becoming generalized and undergoing speedy cheesy change; coming in other individuals it develops slowly, fibroid change predominating; and in others the tubercular lesions may remain entirely local.

It is well known from clinical experience that the general condition of the organism has very much to do with the healing of a local tuberculosis. A local tuberculous inflammation may heal or become arrested in its progress, if the patient gets strong, or it becomes more developed and aggravated if his general health "runs down." Observation has further shown that any simple non-specific wound in a weak, ill-nourished individual may fail to heal, becoming unamenable to treatment, and probably assuming a tubercular character. In some animals spontaneous tuberculosis is unknown, and while some animals are easily tuberculizable experimentally, in others tuberculosis cannot be produced. It is in accordance with experience that in a large number of families the predisposition to tuberculosis is hereditary, and that their members die promptly of phthisis at a certain age from the effects of a simple "cold," while in the history of other families this affection is unknown. Every individual is liable to acquire syphilis, small-pox and other contagious diseases, but it is proven that not every

one can have tuberculosis. A special predisposition and a special individual are required. In such an individual a simple inflammation resulting from any cause whatever, can produce tuberculosis. Therefore, for the development of tuberculosis, two conditions are necessary:

1st. A definite soil.

2d. An indefinite irritant.

"The reaction of the soil is always the same under the influence of any irritant, whether that irritant be a bacillus or not, since the result (tuberculosis) following a lesion in such a soil depends upon the character of the soil, and not upon the character of the irritant, even though one irritant, say bacilli, may act more readily than other irritants. In view of the demonstrated fact that simple injuries of any kind can excite a tuberculosis, but only in certain individuals and tissues, it is evident that tuberculization is determined by the kind of soil and not by a specific irritant. Tubercle should, therefore, be defined as being an inflammatory new formation in a special individual or tissue.

"What is the place for tubercle in pathology? The anatomical criterion for tubercle is a granulation tissue made up of lymphoid or epithelioid cells, which, on account of deficiencies in the soil, does not undergo any higher organization nor tend to heal, but tends to form nodes and undergo cheesy changes. Under favorable circumstances it may heal through fibroid change. (*H. F. Formad, Jour. Am. Medical Association, No. 6, p. 144, et seq.*)

Dr. Formad, after a very exhausive discussion of the contagiousness of consumption, leaves the subject about where it was before the discovery of the bacillus, which is a most important point in the œtiology of consumption in its relation to diseases of the genito-urinary apparatus. His conclusions are (op. cit. vol. 17, p. 403): "That the bacillus of

Koch is a valuable diagnostic sign of tubercular disease.

"2. That nothing is proved by its discovery for the œtiology of tuberculosis.

"3. That the too ready acceptance of the bacillus doctrine is not justifiable and is likely to do more harm than good.

"4. That neither phthisis nor any form of tuberculosis is contagious."

THE SO-CALLED TUBERCULOSIS OF BIRDS.

[British Medical Journal, November 24, 1883, p. 1020.]

"Mr Sutton said that his attention was first attracted to this disease in the spring of 1879, by a farmer in the north of Middlesex, who sent him two dead fowls, stating that disease had broken out among his poultry, and that his stock of birds stood a great chance of destruction. By thoroughly destroying the bodies of the dead birds and killing the sickly ones, the disease seemed to be arrested for a time.

"In 1881 the disease again made its appearance, and nearly all the offspring of the stock of 1879 died. Ducks and geese were not affected in either epidemic. In the latter part of that year Mr. Sutton commenced work at the Zoological Gardens, where in the course of his dissections he found the disease very prevalent.

"After spending more than two years in investigating this matter, examining, from all sources, more than a thousand birds of various species, he proposed to put the results of his observations before the Society, under three heads.

"1. The anatomy of the disease. The disease first manifested itself in the alimentary canal, in the form of yellowish-white nodules, varying in size from a small pin's head to a mass as large as a chestnut. They either projected into the interior of the bowel, thus causing death by obstruction, or on the serous surface, setting up peritonitis. The liver

next became the seat of caseous nodules, equally disseminated throughout its substance, at first very minute, but soon attaining a considerable size. The spleen rarely escaped, frequently being so full of these nodules that the capsule ruptured. The lymphatic glands in the neck were affected in severe cases. The mesentery often contained nodules, due to collections of the morbid material in the ducts leading to the receptaculum chyli. The kidneys, heart and other organs, were rarely the seat of gross lesions. Once he had met with a deposit in the lungs. Death was nearly always caused by the mechanical effects of the nodules in the intestines, producing obstruction or setting up peritonitis.

"2. The zoological distribution of the disease. The birds almost exclusively affected by this disease were those which lived on seed, grain, barley, maize, oats, etc., and fruit. Twice had it occurred in flesh-eaters, *but no case had been met with in those subsisting on fish.* (The italics are mine.—R. J. N.) The Struthiones, particularly the rhea (South American ostrich), were very liable to this affection. The birds liable were the common fowl, peacock, grouse, guinea-fowl, tragopan, pigeon and partridge. Possibly the two flesh-eating birds contracted the disease by eating birds affected with the disease.

"3. The histology of the affected organs. In July, 1883, Dr. Heneage Gibbes submitted specimens of the organs of the rhea, peacock, tragopan, and golden pheasant, affected with tuberculosis, to microscopical examination, with the following result: Sections of the liver when stained with logwood showed circumscribed areas surrounded by fibrous tissues, in which were numbers of cells which appeared to be disintegrated; among them were numbers of small cells which stained deeply. Outside these areas the liver ap-

peared to be normal. On staining sections for bacilli, the whole of the circumscribed areas before mentioned were found to be made up of cells filled with bacilli. These bacilli were in cells varying in size, and were also arranged in tubular masses in what appeared to be vessels. They had the same reaction to staining agents as the bacilli found in tuberculosis. With a high magnifying power (4,000), they were indistinguishable from them; they also contained rounded bodies resembling spores. Bacilli were also found in the lungs and lymphatic glands of the peacock, in the lymphatic glands of the tragopan, and in the lung, intestine, liver and spleen of the golden pheasant.

"The next point for consideration was, whether there was any chance for the disease becoming transferred from birds to other animals. On the farm mentioned above, some of the pigs died from peritonitis, the coils of the intestine being matted together by small growths. These pigs were fed on refuse from the kitchen, including the offal from the poultry.

From a paper in the *Veterinary Journal*, October, 1883, it appeared that, in the Grand Duchy of Baden, the veterinary surgeons report on the frequency of tuberculosis in pigs fed on the residue of the distillery and kitchen-waste, the infection starting from the alimentary canal, and affecting the liver, spleen, and occasionally the kidney. At the Zoological Gardens two carnivorous animals—an eyra from Brazil, and a paradoxure from India— died with their livers in the same condition as tuberculous birds. These creatures are fed on small birds and the offal of poultry. Their livers were examined by Dr. Gibbes, who found the nodules contained bacilli giving the same reaction to staining agents as those found in the nodules of the bird's viscera. Mr. Sutton wished to state in his own name and in that of Dr.

Gibbes, that this was only a preliminary paper; they were still working actively at the subject, hoping soon to bring further important matter before the Society.

American priority in these investigations will, it is to be hoped, be acknowledged by these European savants Obser vations parallel to those announced from the Grand Duchy of Baden were made in this country twenty-five years ago by Dr. J. H. Salisbury, but he lived ahead of his time, and his results were received with incredulity if not with derision. Time, however, seems now about to vindicate the accuracy of his observations. It speaks badly for us that the investigations of our own observers should meet at our hands the cold reception which, as a rule, is the case, while we ardently rush after and incredulously and unquestionably devour a "*rechauffe*" of the same scientific food when hashed up in a foreign kitchen.

The bacterial elements of disease are modified by the soil and surroundings in which they grow. This has been abundantly proved by Pasteur, Koch and others, as to bacteria when cultivated outside the animal organism. It has also been demonstrated that the virus of certain diseases can be modified in its effects upon the human system, by causing it to pass through other animals; of this variola is an example. Pasteur has lately given another instance in which "rouget," a disease very fatal among pigs, is robbed of much of its virulence while preserving its protective power, by being passed through rabbits; but stranger yet, it can be increased in strength, violence and fatality by being passed through pigeons.

In the vegetable kingdom the characteristics of the flora can be modified by the soil (other things being the same). Of this principle the rice planter takes advantage, destroying the highland weed by drowning and starving, but the water plants by dry culture.

From these facts there can be deduced one great principle to govern the treatment of diseases dependent upon bacterial life, viz.: Change the character of the tissues of the individual by dietetic, hygienic and medicinal appliances. If your patient is a whisky drinker, stop his liquor. Is he a vegetarian? convert him into a carnivor. Does he eat meat in excess? put him on vegetable diet. The bacteria thriving in one soil will lose their power in another.

It may be doubted, however, whether the character of tissue can be so changed by diet. Examples are sufficiently common in the vegetable kingdom, but a familiar instance among animals is the immense difference between the flesh of the milk-fed veal, the grass fed and the stall-fed beef.

EFFECT OF TEMPERATURE UPON THE BACILLUS TUBERCULOSIS.

The limits of temperature between which the bacillus flourishes having been determined to be between 86° F. and 104° F., it is not improbable that, as in diphtheria so in tuberculosis, an exaltation of the temperature is attended by a more rapid multiplication of the bacilli, and the increase of the bacilli increases the irritation, and consequently the heat, and this mutual reaction goes on to a certain point where nature or medication steps in and temporarily checks the process, which, however, is again renewed with increasing or decreasing violence, as the case may be, after a certain interval of time in a regularly or irregularly recurring periodicity.

MINUTE CHANGES IN THE CHEMICAL CONSTITUENTS OF THE BODY SUFFICIENT TO ACCOUNT FOR THE VARIOUS FORMS OF DISEASE.

Many of the experiments now being made upon the cultivation of micro-organisms have an important bearing

upon this subject; among other essayists in the *Revue Scientifique* M. Boulsy draws attention to the investigations of M. Raulin, who found that the omission of potash from his culture fluid caused the product of a crop of Aspergillus niger to fall to one twenty-fifth of the original amount, and one-sixteen hundred thousand of nitrate of silver absolutely prevents the appearance of the plant. M. Duclaux, arguing from this, says: "Supposing the aspergillus to be a human parasite – a living contagium – capable of self-multiplication in the human blood and so altering the constitution of that liquid as to produce death; then the introduction into the blood of a man weighing sixty kilogrammes of five milligrammes of nitrate of silver would insure, if not the total effacement of this contagium, at all events the neutralization of its power to destroy life."

It is also evident that under like circumstances the withdrawal of the potash from the body would result in a corresponding diminution of the crop of the micro-organism.

Professor Tyndall in the Pall Mall Gazette, on this subject says: "Reasoning from analogy, I have ventured to express the opinion that the rarity of second attacks of communicable disease was due to the removal from the system by the first parasitic crop of some ingredient necessary to the growth and propagation of the parasite" (*Med. Rec., vol.* 25, *No.* 10, *p.* 279.)

Upon this principle it has been proposed to treat consumption by depriving the system of potash and substituting therefor salts of soda. (*Dr. Bidder, Med. Rec., No.* 14, *vol.* 25, *p.* 376.)

CHANGES IN TISSUES PRODUCED BY DIET.

At first sight it would seem absurd to treat kakoplastic growths by suitable dietetic changes, but a moment's reflec-

tion will show it to be a most scientific and natural mode of treatment. This is not the place to elaborately enter into a discussion of this interesting subject.

It is evident that without an excess of carbon in the food fat could not be stored up. Banting took advantage of this principle and founded upon it his system of "amaigration." On the other hand an excess of carbonaceous food and a deficiency of nitrogenous material will tend to an excessive deposit of fat.

The tissues of the body may, for the discussion of questions of dietary, be divided into muscular, fatty, and connective or fibrous, including in the latter class all tissues except the muscular and the fatty. It will be found that nearly if not quite all the neoplastic growths belong to the fatty and to the connective classes. I was about to say that we never hear of a muscular tumor, but I remember to have seen a record of one case in a foreign journal, so that I must content myself with saying that they are exceedingly rare.

I am able to corroborate from actual experience the assertions which have been already made that, under the influence of a diet of pure muscle, fibrous tumors and various neoplastic growths will be absorbed.

I would strongly urge upon the members of the profession that they make themselves thoroughly acquainted with the principles involved in this plan of treatment, and that before resorting to the knife they give the dietetic system of treating tumors a full, fair and impartial trial, bearing in mind that a long time will be required before results can be seen, but when once a cure is effected, the outcome will be much more satisfactory to the patient, even though the physician is not quite so much of a hero as he would become through the "pomp and vanities of glorious" surgery.

DIFFICULTIES TO BE OVERCOME IN CHANGING FROM A GENERAL OR AN HERBIVOROUS DIET TO A CARNIVOROUS ONE.

It must not be supposed that it is an easy matter to change from a general diet to a purely carnivorous one; on the contrary, it is often an exceedingly difficult process, one which I think should, by no means, be undertaken by the patient without the aid of a medical adviser skilled and experienced in this particular line of treatment, and even then circumstances will arise which will tax to the utmost the talent and the ingenuity of the physician. Symptoms will appear which will awaken all of his anxiety and solicitude, and will demand of him the exercise of the greatest care and attention to minutiæ, and will require all the patient firmness of purpose, faithful and rigid obedience to the rules laid down for his guidance, an unfailing confidence in the skill and ability of his medical attendant, and in the ultimate success of the treatment. If such are not the sentiments governing and controlling the patient, the case had better be abandoned, as the result would almost certainly be unsatisfactory to all parties interested.

It is most important that both patient and doctor should recognize that the business in hand is the restoration of the former to health and strength, and that to the attainment of this result every other interest must be sacrificed. The expenditure of nervous strength must be avoided to the minutest degree, and for this reason the patient had better take his meals alone, or in company with those only who use the same dietary, because even the exertion of repressing a desire for a forbidden food should be avoided. Tepid bathing should replace the cold bath, of which the shock is too much of a demand upon the nervous strength of the invalid, who is not generating heat so very rapidly that he can afford to waste by warming up a quantity of water.

Exercise should never be carried to the point of fatigue, even sitting up will often prove to be too much exertion for the enfeebled heart, and the patient had better remain in bed until conscious of his returning strength, rather than yield to the popular fallacy that under such circumstances exercise will make him strong.

When thin and emaciated a water bed becomes almost an absolute necessity to insure to the invalid a good, comfortable night's rest and to guard him against bedsores.

After much experience in this line of treatment, and after mature and deliberate reflection upon all the circumstances and surroundings of such cases, I would strongly recommend that the few months of the transition stage of this dietetic change should if possible be passed in a suitable hospital or special "home" where the minutest requirements of the case are under the absolute control of the physician.

No athlete ever struggled for a higher prize, no gladiator ever contended with a more merciless or tireless antagonist, or one more ready to take advantage of every point or show of weakness in his adversary, and this too without even the hope of a despairing appeal to a relentless Roman audience. It should not be forgotten for a moment that the enemy is disease and that failure brings sure and certain death, while success means renewed health, enjoyment and long life as its rewards. When an athlete, incited by the hope of only a small pecuniary reward, or actuated by a feeling of pride, will submit to the most rigorous training to acquire the strength and conditions deemed necessary to assure him of success, can there be a moment's hesitation on the part of an invalid to put himself in training for the fight of which the reward is life.

The course of treatment of which we are now speaking differs not very widely from that adopted by the gymnasts

and athletes, the difference being more in the condition of the individual than in the system of training.

AFFECTIONS OF THE PLEURA IN DISEASES OF THE FEMALE ORGANS.

Confirmatory of the opinions which I have held and advanced for many years, even acute pleurisy is now recognized as a complication in certain acute inflammatory affections of the female pelvic viscera. Dr. H. Hæckel, of Potsdam, has recently made some observations on pleuritic effusion occurring as an undoubted result of chronic ovarian and uterine disease. As in such cases when an ovarian tumor exists, the pleural effusion is a result; the removal of its cause, namely, the tumor, is directly indicated, and in cases where this has been done, the effusion has disappeared.—*Medical Record*, 698 *p.* 321.

THE IMPORTANCE OF THE STUDY OF DISEASES OF THE LUNGS IN CONNECTION WITH THOSE OF THE GENITO-URINARY ORGANS seems to me so great that I have not hesitated to bring the subject again prominently before you. Not the least difficult task of the diagnostician is to distinguish between the mimicry and the disease itself, or when true consumption has been developed, to determine to what extent it is dependent upon a gynecological complication. Much of this applies likewise to diseases of the digestive apparatus, of the nervous system, etc., and in men many affections of remote organs will be found to depend largely for their commencement and continuance upon diseases of the genito-urinary system.

THE LIFE DIFFERENCES OF ANIMAL FOODS.

With all our scientific progress, with chemistry pushing research to the last analysis, with implements of precision

constructed to carry our vision far down into the infinity of minuteness, yet are there properties and qualities of matter which now, and probably for all time to come, will baffle the skill of the most industrious chemist and the most expert microscopist, among which is the distinctive difference which exists between the tissues of different animals; this undefinable something which constitutes the difference between the fibre of beef and the fibre of mutton; this differentiation of tissue which seems to be intimately associated with the life principle of the animal itself. Yet this individuality is of the utmost importance in the consideration of the question now before us.

The Anatomical and Physiological indications of a natural carnivorous habit in man are numerous. Among the teeth the carnivorous teeth predominate. The simplicity of the digestive apparatus is that of the carnivora. "In the bile of the carnivora and of man the golden red color is caused by bilirubin (C16H18N2O3). In the herbivora the green tint is due to biliverdin (C16H18N2O4)." "Bile salts are chiefly *sodium glycocholate* and *taurocholate*. In the bile of the herbivora, glycocholate is in excess; in that of man and carnivora, taurocholate."—Dr. J. C. Draper.

In man also the chemical constitution of the urine resembles more that of the carnivora than that of the herbivora.

PROPORTIONS OF NITROGEN AND CARBON REQUIRED.

"Lehmann found while subsisting on a purely animal diet (eggs) that a daily average of 30.3 grammes (467 grains) of nitrogen entered his system, and that a daily average of 24.4 grammes (376 grains) was discharged by the urine."—*Food and Diabetis* (*Pavy*) *p.* 27.

Making allowance for the amount discharged through other emunctories, it is not too much to assume that 600

grains of nitrogen and 4,500 grains of carbon will not be too large an allowance for an adult to consume in a day.

Assuming albumen as a type of the nitrogenous foods, we find, according to Mulder's analysis, that it contains 15.5 per cent. of nitrogen. It would therefore require about 4,000 grains of pure albumen to supply the amount of nitrogen. If meat (beef, for example,) is the food used, it is safe to say that not over one-fourth can be utilized by the system for the production of nitrogen, so that a daily allowance of two pounds of beef will be required to keep an individual in good health.

According to the table from Pagen (p. 300 op. cit), beef without bone contains 3.00 per cent. of nitrogen and 11 per ct. of carbon. Butter contains 0.64 per cent. of nitrogen and 83 of carbon. Following this table, three pounds of pure beef will be required to give the required quantity of nitrogen; but this quantity of beef will also furnish 2,200 grains of carbon, leaving a deficit of 2,300 grains which would be furnished by 3,200 grains, somewhat less than 5½ oz. butter. This amount of butter will increase the quantity of nitrogen so little that the difference may practically be ignored.

VEGETABLE FOOD IS THE ONLY ONE PRODUCING ACUTE INTESTINAL DISORDERS.

That is a bold statement, I know, but after years of patient observation, I can say positively that I have never seen a case of cholera morbus or any kindred affection resulting from a reasonable meal of sound meat and pure water alone.

DIGESTIBILITY OF MEATS.

The time required for the gastric digestion of meat is given by E. Jessen as follows, being the result of the most recent investigations upon the subject:

Raw and finely cut beef	2 hours.
Partially boiled	2½ "
Well boiled	3 "
Rare roast	3 "
Well roasted	4 "
Raw mutton	2 "
Raw veal	2½ "
Raw pork	3 "

(*Medical Record, No.* 697, *page* 291.)

The digestibility of milk as given by the same investigator is exceedingly interesting, as showing that milk does not hold so high a rank in the scale of easily digested foods, as it is commonly supposed to do:

Raw cow's milk	3½ hours
Boiled cow's milk	4 "
Sour cow's milk	3 "
Skimmed cow's milk	3½ "
Raw goat's milk	3½ "

MAN A CARNIVOR.

We often hear expressions of astonishment that persons can live and be healthy upon animal food alone, and in reply to such questions would submit a few quotations. In "F. B. Head's Journeys across the Pampas," (page 307, op. cit.) is an interesting description of the "Indians who inhabit the vast unknown plains of the pampas." "In spite of the climate, which is burning hot in summer and freezing in winter, these brave men who have never yet been subdued, are entirely naked and have not even a covering for their head." "They have neither bread, fruit, nor vegetables, but *they subsist entirely on the flesh of their mares.*" (The italics are mine.) "The ground is the bed on which, from their infancy, they have always slept. The flesh of

mares is the food on which they have been accustomed to subsist."

Sir Francis Head, when crossing the pampas, got tired at first with the constant galloping, and was forced to ride in a carriage after five or six hours on horseback. "But, after," he says, "I had been riding for three or four months and had lived on beef and water, I found myself in a condition which I can only describe by saying that I felt no exertion could tire me. Although I constantly arrived so exhausted that I could not speak, yet a few hours' sleep upon my saddle, on the ground, always so completely restored me that for a week I could daily be upon my horse before sunrise and could ride till two or three hours after sunset and have really tired ten and twelve horses a day. This will explain the immense distances which people in South America are said to ride, and which I am confident could only be done on beef and water."—op. cit., 307.

Again, "We find a people living between the twentieth and fortieth parallels of latitude in the Argentine Republic, known as Guachos (the half-white inhabitants of the pampas). They are a mixed race, of Indian and Spanish blood, who are employed at the ranchos, or great cattle stations, and spend the greater part of their time on horseback in hunting the half wild cattle which roam over the wide grassy plains extending from the Atlantic coast to the foot of the Andes. * * * Those people live entirely on roast beef with a little salt, scarcely ever tasting farinaceous or other vegetable food, and their sole beverage is mati, or Paraguay tea, taken without sugar."—Odontological Society's Transactions, Vol. II., New Series, p. 44, op. cit. 307.

That man in his natural condition is a carnivorous animal, is evidenced by prehistoric finds in caves, in the kitchen middens, (Kjokken mœddings), in mounds, tumuli

or burrows or tombs, and by cromlechs, or dolmens, which have already been discovered and explored in various parts of Europe, and which doubtless exist in various other portions of the world.

During the many thousands of years embraced in the paleolithic period, the life of the human dweller upon this globe was that of a hunter, and his food the result of the chase, not only had he not learned to till the ground, but he had not even arrived at the domestication of an animal of any kind. (Dawn of History, by C. F. Kearz, A. M., p. 15, et. seq.)

Against this view of the dietetic habits of primeval man, it is argued that this condition was the effect of climate, and that while true of the inhabitants of the rigorous north, it is not applicable to the dwellers in tropical countries, and that these were the natural home of man.

Unfortunately for the vegetarian side of the question, it is pretty well proved that the paleolithic man, of whom we are now speaking, was a creature of the north and never did reach the semi-tropical parts of Europe. Even the tropics furnish evidence of the carnivorous habits of man. There are still to be found in India, tribes with whom meat is an article of diet, and among whom there exist traces strongly pointing to former cannibalism. This is likewise true of China and of islands in the Pacific Ocean.

Another of the arguments of the vegetarians is that the existence of fruits and vegetables proves that they were intended as food for man. If such was the case the distribution of man over the globe would be limited by the existence of appropriate vegetation to afford him sustenance, and that this is not the fact is proved by the existence, even in this day, of races of men both in the northern and southern hemisphere, subsisting entirely upon animal food, and

whose powers of physical endurance have, upon that diet, attained the highest degree of which the human machine is capable.

That the use of vegetable food is a departure from the natural condition of man, cannot, in the presence of the evidence before us, be denied, but the great question for us is to determine the diseases which have resulted from this persistent use, for thousands of years, of a diet more or less unnatural. True it is that by "the survival of the fittest," races have become accustomed to this changed dietary, but doubtless it has been at the expense of myriads of lives of those who were unfitted to live upon this food. It indeed, is a most interesting and a most important question to determine how they died who sacrificed their lives to the alteration, all unconscious, no doubt, of the penalty they were paying for their unappreciated and unacknowledged efforts towards a dietetic change.

How quickly in cases of sicknes do we recognize that the natural, the most easily digested, and the most nutritious foods, are those of animal origin. meat, milk and eggs, and we prescribe for our patients these articles of diet or some preparations or combinations of them.

How close we have been to the recognition of the dietetic errors of thousands of years when we invented a milk treatment for bowel affections and for certain renal troubles. On the very verge of the great truth have we been when prescribing a meat diet in diabetes mellitus, and yet blinded by education, habit or custom we passed by unobserving upon the other side.

In Australia it is known that consumption can be cured if the patient will confine his food to mutton and will take plenty of horseback exercise. A similar course to this was the one pursued by Dr. Stewart, of Erskine, near Glasgow,

Scotland. This physician, who attained celebrity for the cure of consumption in the early part of the nineteenth century, confined his patients strictly to a diet of beefsteaks and porter.

That man will tolerate and live upon a vegetable diet is no proof that he will, when so living, be exempt from diseases peculiar to the herbivora. The human machine is constructed to remain in running order under a wider range of circumstances than that of any other animal upon the globe, but it would be unreasonable to say that he is therefore exempt from the diseases consequent upon the hygienic surroundings amid which he is placed.

DRINKING HOT WATER AS A REMEDIAL MEASURE.

In former reports it has been pointed out that the presence of undigested vegetable foods in the stomach resulted in fermentation, with the formation of acid, and as a consequence, impairment of digestion, and irritation of the whole intestinal canal, which, continued for a long time, produced a thickening of the tissues and an increased secretion of mucus often of a very thick and tenacious character—in fact a condition of things analogous to nasal catarrh, or to catarrh affecting other mucous membranes.

"Keep the kitchen clean and the rest of the house will take care of itself," is one of the wise laconicisms credited to the learned but eccentric Dr. Abernethy. To accomplish this, hot water is our sole resource; there is nothing known which will supply its place. In the language of Dr. Cutter, [The Therapeutical Drinking of Hot Water, its Origin and Use.] "The hot water excites normal downward peristalsis of the alimentary canal, washes down the slime, yeast, and bile through its normal channels," "dilutes the ropy secretions of the whole body, and renders them less adhesive,

sticky and tenacious." All this it does, and much more, without checking the digestive processes going on.

As to the question of the history of the use of hot water as a hygienic drink, there is room for discussion, if any one is so minded.

Whether we owe the introduction of the use of hot water as a hygienic beverage to the ancients, or to San Grado, as some sarcastically suggest, or to Priessnitz, or to that wonderful people the Chinese—who seem to have anticipated so many of our useful inventions and discoveries in almost every branch of science and of art, save that of war—from whom some assert we have received it through a medical Celestial, Li Po Tai, imported thirty or more years ago into San Francisco, makes no difference in the therapeutic results obtained by its use; and it is quite certain that to Dr. Salisbury belongs the credit of persistently keeping its value before the profession of the Eastern States.

PROPOSITIONS.

So far I have endeavored to show, 1st. That herbivorous animals are subject to diseases from which the carnivori are exempt, and probably vice versa.

2. That history, anatomy and physiology demonstrate that man is a carnivorous animal.

3. That certain ailments can and often do produce such a changed condition of the system as to predispose it to consumption. Among these, in women, diseases of the genito-urinary system hold a prominent place.

4. That the persistent use of a vegetable diet so changes the tissues of the human system as to render man liable to the diseases peculiar to the herbivorous animals.

5. That consumption is one of the diseases to which the herbivora are peculiarly liable.

6. That this tissue change (the tissue softening of Graily Hewett) is intimately associated with many gynecological diseases.

7. That hot water is the proper and only means of washing out and purifying the alimentary canal and the circulation.

8. That to remedy the evils resulting from tissue changes, which are the consequences of a vegetable diet, the scientific mode of cure is to return to man's natural food, *meat* and *water*.

The conclusions which I desire to draw from these observations are:

1st. That in all cases of consumption actually developed or in the pre-tubercular stage, it becomes imperatively necessary that the genito-urinary apparatus should be in a healthy condition.

2d. That those diseases whose habitat are the tissues, resulting from a preponderance of one kind of food, should be treated by an entire abstinence from that particular diet.

3d. That the object of our treatment should be to place the patient in the same condition of physical training to which the athlete aspires before entering upon his struggles—a contest which with our patient results either in health if we succeed, or death in case of failure.

The *increasing popularity of this system among the profession* is quite noticeable in this locality. Medical gentlemen who were inclined to ridicule the idea a few years ago, when I first drew the attention of the profession in this section to the curative value of this method, have changed front, and become its warm advocates, and some of them have even discovered that they have been following the same plan of treatment for many years.

I would not have ventured to bring this subject so prom-

inently before you except in response to the request of several members of the association personally made to me at the last meeting, that I would lay clearly before them the principles upon which the dietetic treatment is founded, which has for its object the cure of certain bacterial diseases, and the absorption of growths resulting from the development of abnormal tissue elements.

It is not my intention to burden this paper with narratives of cases, but I am tempted to give a history of one which is so exceedingly typical that it cannot fail to be instructive.

A young lady applied to me on account of a weak chest; two years before, she had taken cold, and then had her left side blistered, since then had been treated for consumption by her physician. For several years she has had general neuralgic pains; some cough and expectoration, with pain in the chest; appetite poor, bowels regular, sleeps badly, dreams a great deal; micturition frequent, sometimes painful; urine voided in twenty-four hours about 32 ounces, of a light amber color, sp. g. 1.020, acid, free from albumen or sugar. Menstruation has been irregular for several years, the interval varying from three to six weeks, sometimes very painful, and accompanied with clots; has always had a leucorrhœal discharge. Rheumatism is hereditary, otherwise her family history is good.

Pulse 108, excited; respiration, 28; temperature, 100, auscultation showed slight increase of vocal fremitus on the right side, and a little sibilant rhoncus in the left, but the air penetrated all over the lungs; the sputa did not show bacilli; heart sounds were normal. Of spinal tenderness there was none, but there was epigastric and hepatic tenderness, and the left ovarian region was tender upon pressure.

In this case I gave an opinion that the sole cause of this condition was due to ovarian irritation, Barnes' "oophoria," but I was not permitted to pursue my investigations farther at this time. About twelve months later I was summoned to see the same lady, then confined to bed, and a more complete wreck of woman it is difficult to conceive.

She now had a temperature of 104° F., and a pulse of 120; constant vomiting, with hiccough, and a painful and exhausting dysentery; a painful cough with expectoration; intense pain in the sacrum, spine, left side and chest and in the head; in the urine I found ten per cent. of albumen, and there was pain and tenderness over the bladder, and indeed over the whole abdomen; the legs, especially the knees, were very painful. Again I announced my opinion that the disease was dependent upon the genital system, but finding an intense vaginismus, further examination was impossible. This, however, was sufficient to confirm the diagnosis. Treatment was directed to these organs, and the patient made a slow but complete recovery.

No more remarkable case than this has ever come under my observation. The systemic disturbance was complete; every function was interfered with, not the least interesting of the phenomena being the appearance of albumen in the urine, which I attributed to reflex irritation of the floor of the fourth ventricle, rather than to an alteration of the substance of the kidney itself; to which conclusion I was led by the absence of casts from the urine.

A case like this is of the utmost importance as demonstrating the immense extent to which reflex irritation can go; how it may mimic other diseased conditions and mislead the physician.

IS COOKING MEAT OBJECTIONABLE?

Unreasonable cavilers might say that if objection is made

to the use of vegetable foods, salted provisions, and various chemical products, such as alcohol, vinegar, etc., that therefore the preparation of meat by heat and other culinary processes, which are departures from a state of nature on the way to civilization, should be discouraged, and that meat should be eaten raw.

Cooking, primarily, is the art of preparing food so as to render it more digestible, and hence more nutritious. In so far as it subserves this purpose is cooking useful. If, in addition to this, it pleases the palate and satisfies the eye, it rises to the dignity of an esthetic art, the most useful, nay, the most necessary in existence; but when the real utility of cooking is lost sight of in straining after appearances and flavors, then is such cooking a humbug and a fraud, and has become an injury and an evil rather than a benefit and a good, which it is naturally intended to be.

The preparation of food naturally classifies itself into two divisions—the *chemical* and the *mechanical.* For the present my remarks will be confined to the preparation of animal food, and the first question which arises, almost unbidden, is as to *the degree of heat required in preparing meat,* than which there is no more important question in this whole subject.

It has been found by competent observers that certain of the constituent elements of meat soften at a given temperature, and that at a somewhat higher heat, other of the component parts of flesh begin to coagulate, and progressively harden as the temperature is raised. The end to be attained evidently is to accomplish the former result while avoiding the latter, and this can be done by keeping meat at a temperature of 160° F., and certainly not exceeding 180°. Of course desiccation would result from an excessively prolonged exposure even to this temperature if the heat be

dry, or total disintegration if moist heat is employed, and the time must be so apportioned that the greatest amount of softening will be produced, while avoiding destruction either by drying or solution. This question can only be solved by judgment and experience.

The difference in the behavior of certain albumens when exposed to varying degrees of heat may be illustrated by experimenting upon eggs, but it must be remembered that much that is true of meat is not applicable to the albumen of eggs, because the latter is comparatively simple and homogeneous, while the former is a much more complex structure. If a number of eggs of fowl are exposed to different degrees of heat, say from 1 0 upward, for a sufficient length of time, it will be observed that the coagulation of the albumen is in proportion to the degree of heat and not to the length of exposure (water being presumably used as a heating medium up to 212° F.), and this is true of temperatures much higher than 212°, as may be proved by using pressure, or (what is not so good), by using media other than plain water.

In this fact there is a hint as to preparation of certain foods, which was referred to and practically applied in my report presented to the Association in 1882.

If the eggs of certain saurians are now subjected to like experiments, it will be found that in these the white remains fluid at temperatures which accomplish the coagulation of the albumen of the eggs of birds.

THE PREPARATION OF THE MEAT

Naturally follows as a question of no little importance, which was fully discussed in my report of 1882, but as the paper in question was omitted from the printed proceedings, I will again give a description of the process, which it will be observed is only a modification of the Hamburg or Breslau steak, a well known German diet.

It is true that in the treatment of certain diseases this meat preparation is a necessity but is none the less useful as an article of diet, more especially within the tough meat zone.

Of all meats which have been made the subject of experiments, the pure muscular fibre of beef has proved to be the most useful and efficacious; but to discover a means by which this could be best prepared, so as to adapt it to the weakened digestive organs of the invalid, has been a problem of no little difficulty. A series of experiments extending over a period of more than three years, has resulted in the adoption of the following system, as giving better results than any plan which has been tried up to the present time.

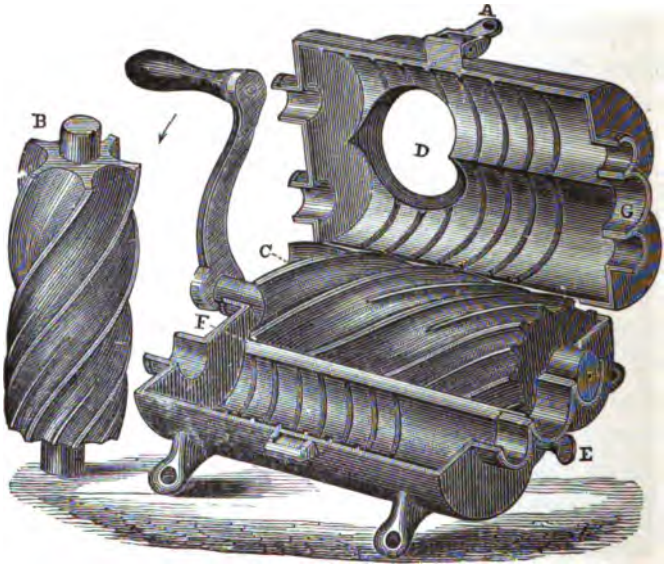
The production of a satisfactory result involves the use of good material, the employment of proper utensils, and the exercise of a certain amount of care, skill and judgment in the preparation of the food.

The meat of fully developed animals, say five or six years old, is to be used, and it is important that they should be in good condition, should be increasing in weight and not falling away at the time of slaughtering. From such an animal portions of the loin or of the middle of the round should be selected, freed from skin, fat, bone, etc., so that as far as possible nothing remains but muscle. The careful selection of the meat saves much subsequent trouble in the course of its preparation. The pieces of muscle are next cut into slices suitable to be passed through the chopper, the size of the pieces depending of course upon that of the machine used, but an inch or two square will be about right.

There are two classes of choppers, one in which the motion is rotary and another in which it is reciprocating. For general purposes the rotary form will be found the most

convenient and expeditious, although there are special cases in which the reciprocating form is essential. It is well to keep in mind, that the objective point at this stage of preparation, is the perfect separation of the muscular fibre from the connective tissue or strings as they are commonly called.

Of the rotary choppers the "Hale," manufactured by the Russell & Erwine Manf'g. Co., New Britain, Conn., better fulfills the requirements than any other which has come under my notice.



Directions for Use.—1. Attach the machine by screws to a bench, board or table.

2. Loosen the thumb screws at the ends of the case.

3. If it be desirable to cut the meat fine, place the rollers in the case with their light ends (the ends lettered in the cut) under the funnel or feed orifice, putting the roller with

crank attached on the hinged side. If it be desirable to cut the meat coarse, place roller B, (the short roller) in the case, with its heavy end, (the end not lettered in the cut) under the funnel.

4. Be careful to place the rollers so that when the crank is turned in the direction of the arrow, the LONG flanges of roller C shall press on the flanges of roller B.

5. Close and fasten the case, and tighten the thumb screws until the edge of the knife presses against the rollers so firmly (when the meat is raw, tough and stringy,) as to require considerable force to turn the crank. When the meat is cooked, fat and tender, less pressure on the knife is required.

As the flanges of the rollers act like shears upon the edge of the knife, it is important that the contact should be perfect, hence, the screws should always be tightened when the crank is found to turn easily.

The knife will be kept sharp by the action of the rollers, if it is firmly pressed against them by tightening the screw at both ends.

6. When practicable, cut the meat into long, narrow strips, feed slowly and steadily.

7. The working of the machine will be improved by moistening it with warm water before using it.

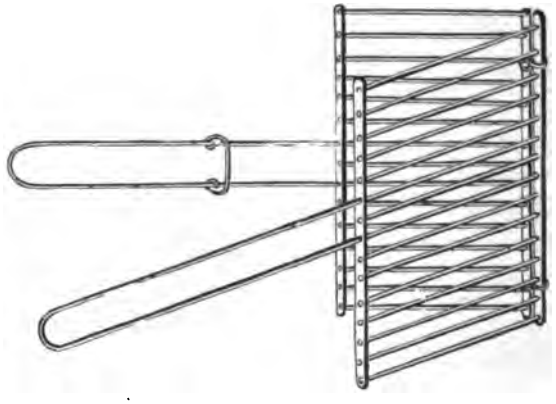
The pieces of muscle having been ground in the machine, it is to be opened and cleaned of all strings remaining in it, the ground muscle is also to be picked over and all the tendinous pieces *i. e.* those which have a white color, are taken out and rejected. The half ground muscular tissue is again to be returned to the chopper and the above process is to be repeated a second, a third, or a greater number of times, until the meat is reduced to a fine pulp.

Of the reciprocating machines, the " American Chopper,"

somewhat with the quality of the meat used, a fine quality of meat cooking more rapidly than a coarser grade, but from three (3) to five (5) minutes may be taken as the limits. It is important that it should not be overdone.

Butter and celery are almost always allowed to patients who are upon this diet, also sauces, such as Worcestershire; and lemon juice instead of vinegar.

Other meats may be prepared in the same way with advantage, particularly if they are tough and stringy, but it must be borne in mind, that although by this process a tough meat may be made edible, a good steak cannot be made out of poor material.



Some patients will be found who will prefer the pulp cooked without having been pressed, others, particularly children, will eat uncooked pulp with relish in some cases with, in some without, the addition of condiments.

MEAT TEA.

Chemists would have us believe that beef tea is of no more nutritive value than urine, having, according to these gentlemen, the same nominal composition and containing

the same salts. It will be a long time and will require something more than a mere chemical analysis to shake the belief of the practitioner in the dietetic value of beef tea. The stimulation and the nutrition following its use are matters of observation and not of theory, and of all professions, that of medicine is the least credulous as to mere assertions, its members have long ago learned that everything must be put to the test of actual practice and by the results thus obtained must stand or fall.

It may be that analysts in this case, thinking of nothing beyond the walls of their laboratory, have forgotten the principle of isomerism by which they themselves account for the diversity of properties possessed by compounds consisting of the same elements in the same proportions, or it may be that the preparation examined was unskillfully prepared, but there are many ways by which a meat tea may be prepared so as to contain all the constituent elements of the meat, both saline and albuminous, which are soluble in water, and one at least which will bring into solution the whole of the meat except the connective tissue. A few of these receipts I have inserted, some of which are original. All have been thoroughly tested in practice and their dietetic value demonstrated. It is well to have as many methods as possible of preparing nourishment, because the sick quickly tire of one flavor, and I therefore add two receipts for the preparation of meat food: "Chicken Panada," and "Cream of Barley," for which I am indebted to the National Training School of Cookery, London, England. These will serve as models for other similar diets.

UTENSILS USED IN THE PREPARATION OF BEEF TEA.

A careful consideration of the qualities of a properly prepared meat tea will show that the ability to regulate the

temperature at which it is cooked is a matter of prime importance, therefore, although it is possible for a careful cook to prepare it over a naked fire, it is better that a water bath should be employed for the purpose.

To prepare beef tea in quantity, having a due regard to the economy of time and of material, it is well to have, 1st, a meat chopper; 2d, a water bath; 3d, a press.

THE CHOPPER.

For ordinary purposes any form of chopper will answer, from the knife and board, where time is no object, to the more complex machines to be found in the market; but there are cases in which it is important that the tea should be prepared from pure muscular fibre, in which case the choppers already referred to will be found most convenient.

WATER BATH.

What are called double sauce-pans can now be purchased at the house-furnishing stores. They are really water baths, and will be found very convenient. When a special arrangement is not at hand, a bath may be extemporized from any two vessels of metal, glass or crockery, the larger of which will be of such a size as to easily contain the smaller, and allow of it being surrounded with a stratum of water. A glass bottle and a saucepan are the time-honored elements of which the kitchen water bath for making beef tea is composed; but the liability of the bottle to break will suggest the propriety of substituting for it a suitable tin vessel, which will also do away with the inconveniently narrow neck of the bottle.

PRESS.

The most convenient and effectual press which I have found is what is known as the *Enterprise Combination Drug Press.**

Directions—1st. Clamp the press tightly to a bench or stand, insert the proper strainer in the groove in the bottom of the cylinder, slide the screw therein, securing it in position by means of the clasps and thumb-screws; place suitable vessels in position, as shown in the cut. 2d. Regulate the dryness of the pulp or refuse by raising or lowering the thumb-screw attached to the outlet.

The article pressed is forced forward by each revolution of the screw into smaller and still smaller space, and thus the entire substance is gradually extracted and flows through the strainer in bottom of cylinder to the vessel beneath, and the dry mass or refuse is expelled through the outlet at the small end of the cylinder.

* Manufactured by the Enterprise Machine Co., Philadelphia, Pa.

THE BEEF.

My own experience points to the round as being the best part from which to make beef tea. It should be juicy and free from skin, fat, gristle and bone.

INGREDIENTS.

Beef, four parts; water one part. Salt, pepper and other spices, as desired. Yield of beef tea about fifty-nine per cent. These proportions give the richest result that can be conveniently prepared by this method.

PREPARATION.

Take, say four pounds of muscle pulp or of chopped meat, or of the refuse from the preparation of the meat food, according to the case for which the tea is intended; add to this one pint of cold water, mix well together, and let the mixture stand in a cold place for half an hour or an hour, by which time the whole will be found to have formed a pulpy mass. Put now this mixture into the inner vessel of the water-bath and put on the cover to retain as much as possible the flavor; place this vessel in the larger vessel of the water-bath, and pour into the latter a sufficient quantity of water, limiting it so that the water will not boil into the inner vessel, if it should chance to be lower than the outer one. Place the whole on the fire, and let the water in the outer vessel boil, but not necessarily violently. It is well to stir the meat occasionally to avoid the over-cooking of the outer portions. In about forty minutes the temperature of the mass will reach 160° F., which point will be readily recognized by an experienced person by the pink color assumed by the meat; but it would be much better not to

rely upon judgment, but to use a thermometer for that purpose.

This is the lowest temperature at which meat can be considered cooked, and it is also the point at which the beef-tea possesses the laxative property in the highest degree. The heat may be pushed to a higher degree if this should be deemed advisable, or else the tea can now be extracted. If the latter course is to be adopted, whatever can be so done is poured off, and the meat is passed through the press. The yield should be about forty-seven ounces.

It is not desirable that fat should be given with the beef tea. Its removal is an easy matter if the tea is first allowed to cool; but if this is inconvenient, a piece of blotting paper passed over the surface of the warm tea will absorb every particle of the grease.

The appearance of this beef tea is that of a muddy opaque fluid, of a pinkish, brown color. The opacity is the result of a quantity of albuminous particles floating in the fluid; these, if allowed to precipitate, leave a dark, reddish liquid which coagulates when heated to or near to boiling point.

TESTING BEEF TEA.

Two qualities of beef tea are of such importance that they should be carefully looked after by the physician himself, unless, indeed, he is blessed with the invaluable assistance of a careful, conscientious, intelligent and educated nurse. The properties referred to are, first, its nutritive power, represented largely by the uncoagulated albumen; second, its fredom from acidity.

1st. Having allowed the tea to precipitate, a little of the clear supernatant fluid should be put into a test-tube; if the color is of a dark, reddish hue, almost certainly has the preparation been properly conducted, but if it is clear and

watery, then has the temperature been allowed to rise too high, and the albumen being coagulated. the nourishing power of the tea is seriously impaired.

2d. The freedom from sourness can be determined by adding to some of the clear fluid a little bicarbonate of soda; this falls to the bottom, and a few bubbles of disengaged air rise to the surface. If now, after resting quietly for a few seconds, a quantity of gas is liberated, as may be seen by holding the tube between the eye and the light, then is the tea too acid, and its use may give rise to unpleasant symptoms

I regret that I cannot at present suggest a more delicate test of the freshness of beef tea, for, while it is quite certain that tea producing effervescence should not be used, it is by no means sure that this will evidence the very slight change which may produce disagreeable effects upon our patient. It might be thought that litmus would supply the want, but unfortunately the meat itself gives with litmus an acid reaction.

MEAT JUICE BY MACERATION.

About half an hour or an hour before the juice is required for use, mix together equal quantities of meat pulp and cold water; let the mixture stand in a warm place (as beside the stove) for some minutes, gradually increasing the heat until by the time it is to be served it is just warm enough to drink, and no more. The juice may then be strained from the now bleached and tasteless pulp, and the little remaining therein thoroughly pressed out.

If this meat juice is prepared cold, and so used, it is very much richer in albumen, for coagulation commences at a very low temperature in the juice after extraction from the meat. My experiments upon this subject show that a change takes place even as low as 100° F.

MEAT JUICE.

A very convenient and rapid method of obtaining the juices of the meat in concentrated form is by the use of Osborne's meat juice press,* which is a great improvement

upon the ordinary lemon squeezer so long used for the same purpose.

Warm the cup and cover by placing them in hot water; or what I have found preferable, plunge the whole press into boiling water until the cup is covered. This avoids the cooling of the cup by contact with the cold iron of the press. The meat may be partly broiled and seasoned. Juicy meat cut in pieces about one and a half inches square, usual thickness, will yield nearly one-fourth its weight of pure liquid; to this an equal quantity of warm water is usually added. This must be used as quickly as possible after preparation, as it rapidly sours.

*Manufactured by H. F. Osborne, Newark, N. J.

CATHARTIC EFFECTS OF MEAT JUICE.

A certain amount of relaxation of the bowels is a symptom which I have frequently observed to be attendant upon the free use of beef tea, and I have been in the habit of taking advantage of this property to correct the constipation sometimes following the use of meat diet. I came after a while to look upon beef tea as an elegant combination of food and physic, and found that its cathartic property increased in proportion as the temperature employed in its preparation was diminished, and being almost entirely lost when the beef tea was boiled.

In beef tea prepared at a low temperature, say 120° F., there exists in solution a quantity of albumen, and it may likewise contain more or less in a light flocculent condition —just the state in which it would be most readily acted upon by the digestive forments; let, however, the same tea, after its preparation, be heated to boiling point, and the dissolved albumen will be observed to coagulate, the flocculi to harden, and the whole character of the fluid to change. The laxative quality of beef tea seemed to reside in this uncoagulated albuminous part, for in proportion as this was coagulated, in like proportion did it seem to lose its cathartic property. Later observations upon the action of meat or meat juice slightly changed even by a few hours keeping, makes it desirable to further investigate this matter, with the object of determining positively if the cathartic action of beef tea is one of its inherent qualities, or is the result of slight souring.

PANCREATIZED (PEPTONIZED) BEEF TEA.

Take of pure muscle pulp one quarter lb. Cold water, one half pint. Cook over gentle fire, stirring constantly till it has boiled a little —a few minutes. Then pour off the liquor

for future use, and beat or rub the meat to a paste, and put it into a jar or bottle with half a pint of cold water, and the liquor poured from the meat. Add

Extractum Pancreatis ..... ʒ ss
Soda Bicarb ..... ℈ j.

Shake all well together, and set aside in a warm place, at about 110° to 115°, for three hours, stirring or shaking occasionally; then boil quickly. It may then be strained or clarified with white of egg, in usual manner. Seasoning to taste, if condiments are permissible.

The above is a slight modification of a recipe from a pamphlet issued by Messrs. Fairchild Bros. & Foster, which I have used and find excellent in flavor and nutritious. Although not noticeable, there is in this preparation an excess of alkali, which may and indeed has disagreed with some of my patients; a few drops of dilute muriatic acid will entirely remove this difficulty by converting the bicarbonate of sodium into chloride of sodium, or common salt.

BAD EFFECTS OF SOUR MEAT.

Meat, before decomposition begins, becomes sour. While the flesh is in large masses this change is not very perceptible to the taste, but after the meat has been chopped the acetous fermentation goes on rapidly so that in twenty-four hours it is sensibly acid to the palate and will blacken a steel knife used to cut it.

Before the flavor of the meat will tell of the change it has undergone, the effects upon the digestion become most apparent; pyrosis, acid eructations, a sense of fullness in the epigastrium, colicky pains in the bowels, diarrhœa and tenesmus, such are the symptoms resulting from the use of sour meat. Precisely similar effects follow the use of sour beef tea or of tea made from sour meat.

It is well to know that such conditions can follow the use of improper food, or at times the practitioner may be puzzled to account for some of the very sudden changes taking place in his patients without any apparent alteration of diet. No patient should be permitted to use beef tea giving an acid reaction with an alkaline carbonate, i. e., producing effervescence.

COOKING AN EGG.

You wonder probably if I am going to waste *your* time and my own in telling you how to cook an egg, "as if there could be anything new on such a subject which every child understands, or as if there could be any necessity to speak about so insignificant a thing as cooking an egg, before an audience of the most scientific medical men of the State." Let us see: Touching the necessity, we all, I presume, prescribe a soft boiled egg for a patient when occasion requires, and expect it to be digested even in cases in which the digestive powers are enfeebled, but it has often happened to me and doubtless to each of you also that the patient did not digest his *soft boiled egg* and that the lumps of undigested albumen could be seen in the discharges. This is rather a singular result to come from eating a *soft boiled* egg. Let us analyze this *soft boil* and we will find that it generally consists of a layer of hardened albumen of varying density and thickness immediately within the shell, the rest of the egg to the centre being more or less solidified. There is not probably one person in a thousand who can cook eggs at various times and always exactly alike as to the amount of the coagulation, so much depends upon the size of the egg, the temperature at which it has been kept, and other circumstances.

Two elements enter into the problem we are now discuss-

ing, both of which are controllable, viz.: *time* and *temperature*. According to the ordinary practice time is the variable element which is changed according to the judgment of the cook to suit the size of the egg and the degree of hardness required; but judgment is too fallible to be trusted, and so I propose to ignore the question of time altogether, only making certain that sufficient is allowed, and to change the temperature according to a fixed rule, which is this: *albumen coagulates in proportion to the degree of heat to which it is exposed.*

THE PROCESS OF COOKING A SOFT BOILED EGG.

Take as large a quantity of water as convenient, heat it to 170° F., using the thermometer to insure accuracy—provide means either by a lamp or boiling water or otherwise to maintain this temperature. Let the egg be placed in the water thus heated and the temperature kept at 170° F. for a sufficient length of time to heat the egg through, say five or ten minutes, but whether the time is five or ten or fifty minutes makes no difference whatever in the result, provided the exposure to the heat is sufficiently prolonged to accomplish all the coagulation which that degree can effect.

If the coagulation produced at this heat does not suit the patient, a temperature five or ten degrees higher or lower may be tried until the exact shade is ascertained, and then this can be reproduced exactly at every trial, quite independent of variations in size which are met by increasing the time of exposure, the power of coagulation remaining always the same. The period of time required to cook the largest egg being once determined, the same length of time can be used to cook the smallest without in any way changing the result.

All this looks troublesome, but it is much easier done

than described; furthermore, when anxious, loving hearts control willing hands, trouble will not be considered, if care and labor can tempt the loved one back to life and health.

MILK PEPTONE.

Under the name of "peptonized milk," I proposed in 1880 to make a milk preparation by the action of pepsin. (See Peptonized Milk as a Food for Infants and Invalids—*Amer. Jour. Obs.*, July, 1880.) The same name has since been applied to milk which has been acted upon by pancreatin. As this dual use of the word must result in confusion, and as the physician might desire to prescribe one or the other preparation, I propose to call the first *pepsinized milk*, and the second *pancreatized milk*, leaving the terms *peptonized milk*, or *milk peptone*, to the use of the chemist, to be by him applied to the finished product of either one or the other preparation, to whichever he may determine that it properly belongs.

It may sometimes be found useful to prescribe milk in some of these forms. I have thought it well, therefore, to insert some of the recipes here, referring to the paper above mentioned for other similar preparations.

PEPSINIZED MILK.

Milk Coagulated by Rennet or Pepsin.—Take one pint of milk at 80° F., and add a teaspoonful of rennet solution, or ten grains of pepsin, and keep the mixture at 80° F. When coagulation is complete, but before the whey has begun to separate, beat the whole up smooth with a whisk or beater, and pass it through a fine milk-strainer to insure the minute division of the curd.

This preparation appears to keep equally as well, or even better than raw milk, remaining apparently unchanged for at least twenty-four hours if kept cool.

When kept quiet, it behaves somewhat like buttermilk,

the flocculi of caseine falling to the bottom, the cream floating on the surface, while between the two is a layer of whey. The proportions of these three elements vary according to the richness of the milk. In this way, these constituents of the milk can be separated, and their relative proportions varied as may be desired; but it is necessary to mix them well together before using the milk as food.

The same rules, in regard to dilution, should guide us in administering this food as apply to feeding with pure cow's milk; and it is often advantageous and necessary to add a little milk-sugar and lime-water. The latter should always be added to the point of neutralization, when from any cause this prepared food gives an acid reaction.

PANCREATIZED MILK.

Into a clean quart bottle put a powder of 5 grains of extractum pancreatis, or pancreatin, and 15 grains of bicarbonate of soda, and a gill of water. Shake; then add a pint of fresh milk.

Place the bottle in a pitcher of hot water, or set the bottle aside in a warm place for an hour or an hour and a half to keep the milk warm, about 110° F.

By this time the milk will become well peptonized.

When the contents of the bottle acquire a grayish-yellow color and a slightly bitter taste, then the milk is thoroughly peptonized, that is to say, the caseine (or curd) of the milk has been digested into peptone, as it is naturally in the body.

Partially peptonized milk has no bitter taste—has, indeed, little apparent evidence of any change.

Yet, in most instances, and especially for infants, it is sufficient to partially peptonize the milk.

After the contents of the bottle get warm, then every mo-

ment lessens the amount of the indigestible ingredient of the milk.

The degree of peptonizing necessary in each case is best determined by the readiness with which it is assimilated by the patient.

Great heat destroys, or cold checks, the digestive action.

So, after either complete or partial digestion, it is simply necessary, in order to prevent all further action, to at once place the bottle of peptonized milk on ice, or put the bottle into a vessel of boiling water, long enough to scald its contents. It may then be kept like ordinary milk.

It must be borne in mind that this is not a cooking or chemical process; the object is to subject the milk to the action of the digestive principle (the extract pancreatis) at a temperature similar to that of the body.

Peptonized milk may be sweetened to taste, or used for punch, with rum, etc., or made into jelly; also in the preparation of such foods as ordinarily require the use of milk; according to the instructions of the physician.—*Extractum Pancreatis, p.* 8.

Pancreatin as a remedial agent was first proposed by me in 1859. See *Sav. Journal of Medicine*, January, 1859, p. 327, where will also be found a process for its manufacture.

COOKING OYSTERS BY STEWING.

All that has just been said regarding the cooking of eggs applies with equal force to oysters, which carry with them their own digestive ferment in a state of activity, if it is not destroyed by the cook.

The invalid should never eat the beard of the oyster, nor what is called the heart or eye, but what is truly the muscle; these should be cut off and boiled to make the sauce, from which they should then be strained. The sauce being pre-

pared, it should be heated to 110° F., not exceeding 120° F.; the bodies of the oysters should then be put into this warmed sauce, and the heat maintained until they are warmed through.

It is hardly necessary to mention that when cooked at so low a temperature, all plates, bowls, etc., in which the food is served, should be brought to the same heat, and so kept until it is given to the patient.

"CREAM OF BARLEY."

(*National Training School of Cookery, London, England.*)

"1. Take half a pound of veal cutlet, and cut off all the fat.

"2. Cut the lean into small pieces and put it in a saucepan, with one pint of cold water.

"3. Add half an ounce of barley, previously washed and soaked for an hour or two in cold water, and half a saltspoonful of salt.

"4. Put the saucepan on the fire, and let it boil for two hours.

"5. Strain off the liquor into a basin, and put the meat and barley into a mortar and pound them together.

"6. Take a hair sieve and put it over a basin.

"7. Turn the pounded meat and barley on to the sieve and rub them through with a wooden spoon.

"8. Pour the liquor on to the sieve to help the pulp to pass through.

"9. When it has all passed through the sieve into the basin, stir in smoothly two tablespoonfuls of cream, and it is finished.

"CHICKEN PANADA."

(*National Training School of Cookery, London, England.*)

"1. Take a chicken and clean it in the same way as for roasting a fowl.

"2. Cut the chicken in half, dividing it down the middle of the back with a sharp knife.

"3. Take all the flesh off the bones of half the chicken, and cut it into small pieces.

"4. Put the pieces of chicken into a gallipot, and sprinkle over them half a tablespoonful of salt.

"5. Take a piece of paper and tie it over the top of the gallipot.

"6 Take a saucepan half full of boiling water, and put it on the fire.

"7. Stand the gallipot in the saucepan, and let it *simmer* for two hours. The water must not cover the gallipot.

"8. Take the gallipot out of the saucepan.

"9. Take the pieces of chicken out with a spoon. None of the liquor must be lost.

"10. Take the pieces of chicken and put them into a mortar and pound them well to a pulp.

"11. Take a tammey sieve and stand it over a basin.

"12. Take the pounded chicken and pass it through the sieve, rubbing it with a wooden spoon.

"13. Pour a little of the chicken liquor into the pulp on the sieve to make it pass through more easily.

"14. When all the chicken pulp has been passed through into the basin, stir in one tablespoonful of cream, and it is finished.

"From the bones a strong chicken broth may be made, some of which is required to help to pass the chicken through the sieve."

NOTE.—For the illustrations used in this paper, I am indebted to the Russell & Erwin Manufacturing Co., New Britain, Conn.; Athol Machine Co., Athol, Mass.; Enterprise Machine Co., Philadelphia, Pa.; and H. F. Osborne, Newark, N. J.

A CASE OF RESECTION OF HUMERUS.

By S. D. BRANTLEY, M. D., Sandersville, Ga

Sergeant Tatum, of Wheeler's Cavalry, was wounded in November, 1864, near Davisboro, in this county. The wound was caused by a minnie ball shot diagonally through the arm, breaking the humerus in a dozen pieces about half way between shoulder and elbow. Two or three days after he was wounded I was sent for, and, in company with Dr. J. R. Smith, of this place, visited him. The injury to the bone and soft parts was so extensive that we thought amputation necessary. Upon communicating our views to the patient, however, he stoutly objected to the operation and begged that we try some other plan if we thought his life could be saved. Our anxiety to yield to the patient's wishes led us to another consultation and we decided upon resection. A crucial incision was made on the posterior part of the arm, the ends of the bone sawed off and the fragments of bone taken out and carefully preserved. The wound was stitched and the arm placed upon a straight splint.

Cold water was the only dressing used. In about five weeks the straight splint was removed and a leather one substituted. This was simply a broad strap buckled around the arm. The patient did well, and within eight weeks from date of operation was able to return to his home in Alabama. Dr. Kollock Green, of Macon, was on a visit to this place, a few days after the operation, and was requested to see the patient.

Dr. G. adjusted the fragments of bone and they measured four and three-quarter inches. He gave it as his opinion that the patient would certainly lose his arm and probably his life by the delay.

The arm was left on, however, and the writer received a letter from Mr. Tatum several months subsequently, stating that he had very good use of it.

There are two points of interest in this case. One is the portion of bone removed. In all cases of resection that I have seen reported it has been the end of the bone removed; in fact, it is to the removal of the carious extremities of long bones, or the unconsolidated extremities of fractured bones forming irregular points, that the term resection is given. The other point of interest is the length of bone taken out, $4\frac{3}{4}$ inches, and a good recovery—a recovery sufficient, as the patient himself wrote, to have very good use of his arm.

A RARE CASE.

By N. P. JELKS, M. D., Hawkinsville, Ga.

This case possesses peculiar interest to me, because of the extreme rarity of the disease, it being the only one of the kind that has come under the observation of the several physicians who have examined the patient. Indeed, I can find no text book or journal that describes it.

On the 12th of August, 1882, I was called to see J. W., a boy two years of age, of delicate constitution and nervous temperament. Being in the country, Dr. F. M. Jordan was summoned. He found patient with severe convulsions, confined to one side of body, and high fever. Dr. Jordan remained with patient all night, but was not able to control the convulsions until the following morning, when he left the patient and gave me a history of the case, with his treatment. I found the child on my first visit (made on the same day on which Dr. J. left) with slight fever, temperature 101 degrees F., unconscious and complete hemiplegia of left side. Diagnosis, congestion of brain and cerebral hemorrhage, the paralysis being caused by the latter.

Treatment: Blister to nucha and over region of stomach and liver, and four grain doses of quinine, alternating with three grain doses of calomel, giving each every two hours, with occasional doses of bromide potassium and hydrate of chloral, to prevent a recurrence of the convulsions.

Under this treatment consciousness gradually returned. Dr. Jordan returned late in the afternoon, and we continued the quinine in same doses, but at longer intervals, every four hours. The mercury was reduced to one grain every four hours. This treatment was kept up through the night. Temperature rose to 103 degrees at 12 o'clock, but by 5 a. m. had fallen to 100 degrees. Pulse, which had on previous morning been as high as 140, had fallen to 110, and our little patient seemed quite bright. Paralysis did not begin to improve until a week after beginning of attack, when slight improvement was noticed. Mercurials were stopped on second day of treatment, the bowels being well moved, but quinine was continued in reduced doses three times a day, until all danger from fever was passed, when he was put on strychnine, combined with iron and quinine. In two weeks from date of attack patient was able to walk, with a little assistance, and in three weeks could walk alone. On 15th September patient was seized with a convulsion, confined to paralyzed side. Consciousness was retained throughout the attack. This was first convulsion since night of previous illness. I increased doses of strychnia, and ordered bromide potassium in 5 grain doses three times a day, to be repeated every hour or two, if very nervous at any time. Convulsions recurred every morning, but became lighter each day until only the upper extremity of affected side was involved, when they ceased altogether for a month, when he had an epileptic fit. In October the child's parents brought him to my house, and informed me that he was having a kind of "jerking in the ead." They remained all night that I might watch him arly the next morning, the time when he was most subject to this new trouble. While at play on the floor the next morning, I noticed him suddenly nod his

head, and immediately go on with his play. This was repeated several times before breakfast. These attacks rapidly increased in violence and frequency, in spite of treatment. I consulted Dr. A. R. Taylor, who, after examination, acknowledged that he had never seen or read of "anything of the kind" before. We pronounced it a rare form of epilepsy. We consulted our text books and journals, but could find nothing similar to it. We consulted physicians with same result. In November patient had another epileptic seizure at night, the time of previous fit. These fits have continued with greater or less frequency ever since, there being generally several weeks between them. By this time the "nodding" or "jerking" had become so severe that at each attack he would be thrown violently forward on his face, if not supported. They were always instantaneous, and he never lost consciousness. We tried the various kinds of treatment laid down for epilepsy, but to no avail. He steadily grew worse. With our advice, his parents took him to South Carolina, thinking a change of air might be beneficial. While there they consulted Dr. Dubose, who put him on iodide potassium, with the idea of attempting absorption of any deposit of blood that might be in the brain. He also kept him on nervines. This treatment accomplished nothing, though continued two months. For a year and a half he has been kept in a kind of a harness while awake, which one of his devoted parents continually holds in the hand, that he may walk without danger of falling. He has recovered perfect use of the lower extremity, but the head is drawn and weak. His mind does not keep pace with his body, and I fear the trouble will terminate in idiocy. His appetite from the beginning of the disease has been ravenous, it being impossible to satisfy it.

NECROLOGY.

Report of Committee on Necrology.

Mr. President—It is with peculiar sadness that your Committee on Necrology transfers so many names from the roll of active membership to the roll "In Memoriam." "The Reaper" has been busy in our midst since last we met. The following named members have been gathered unto the sleep of the just: Lewis DeSaussure Ford, Augusta, Ga.; Alexander Means, Oxford, Ga.; Sterling C. Eve, Augusta, Ga.; James M. Carlton, Athens, Ga.; Edward H. W. Hunter, Louisville, Ga.; Thomas Raines, Atlanta, Ga.; Adolphus S. Fowler, Ringgold, Ga.

Seldom has this Association been called upon to mourn the loss of so many highly valued members as upon the present occasion. The memorial tributes herewith presented, express the loss which this Association, as well as the several communities from which these brethren came, sustained.

Your committee would offer the following resolutions:

Resolved, That in the death of the above named members, we deplore the loss as bearing heavily upon their families, the welfare of our Association, the cause of scientific medicine, and the sick and afflicted of their several communities.

Resolved, That this report be transmitted by letter with a copy of the memorial tribute, by the Secretary, to the family of each of the deceased.

Respectfully submitted, Eugene Foster,

Chairman Committee on Necrology.

Macon, Ga., April 19, 1884.

LEWIS DeSAUSSURE FORD, M. D, LL. D.

BY EUGENE FOSTER, M. D., Augusta, Ga.

The subject of this notice was born in Morristown, New Jersey, December 30, 1801, died in Augusta, Ga., August 21, 1883. His father was the Hon. Gabriel H. Ford, of the Supreme Court of New Jersey. Dr. Ford received an academical education, and began the study of medicine at Morristown with Dr. Jones, being carefully guarded and encouraged by Miss Anna Randolph, a maiden lady of great intellectual force, a daughter of John Randolph, of Philadelphia. His medical education was acquired at the College of Physicians and Surgeons of New York. From this college he was graduated M. D. in 1822. A few months after taking his degree he settled in Bamburg, South Carolina, to practice his profession. In 1827 he located in Augusta, Georgia, where the remainder of his life was spent.

No citizen of Augusta ever more signally enjoyed the respect, confidence and love of the community than did Dr. Ford. As a citizen, he was noted for his patriotism and active public spirit. Every measure calculated to promote the welfare of his State or city found in him a zealous supporter. In politics he was actively interested, being, prior to the war, an ardent Whig. For a number of years he was elected a member of the City Council. In 1846 he was elected Mayor of Augusta. His administration of this trust was marked by wisdom, economy and integrity, such as to lead to his re-election when his term of office expired. Re-

tiring from this office, he devoted his time wholly to his professional duties. After the war, however, when a military satrap established his headquarters at Atlanta, and threatened to imprison any man who dared to counsel the citizens of Georgia contrary to the views of the United States Government, this venerable patriot, intense in his love of liberty and fearless of consequences to self, delivered two addresses to his fellow-citizens, urging them not to adopt the "Reconstruction measures" proposed by the military authorities. These addresses were entitled, "Popular Government—the United States and Confederate States Governments Compared." No champion of the "Lost Cause" ever more learnedly or fearlessly exposed the iniquitous measures placed upon a conquered and helpless people. The defense of the Confederate States Government was one of the most masterful productions of the times.

Dr. Ford was a Christian man. Feeling a personal need of daily communion with his God, he sought to satisfy his judgment as to the evidences of the Christian system. He sought it as a rock upon which to plant his feet, to enable him to successfully battle with the storms of life, and by which he might enter the pearly gates of the New Jerusalem. The examination of the evidences—both internal and external—of Christianity fully confirmed his faith and from it he never wavered. In times of trouble or distress of self, kindred or friends, he carried his burden in prayer to the Redeemer of mankind and laid it on his cross. In his daily walk and conversation he illustrated and adorned the profession which he had made. Not content with enjoying to himself the fruits unto righteousness, he sought actively to diffuse the teachings of his Lord and Master, hence we see him leading the minds of his students to contemplate the goodness of God unto man, and the truth of revelation. He

urged his students to study the Natural Sciences and said, "But they exert a more direct and decided influence in forming the moral character; they tend to direct the thoughts through nature, to the God of nature. His works, the objects of study, are continually revealing to the mind of the student, the wisdom, the power, the benevolence of the Creator; the perception of these attributes encourages in him, a natural devotion and reverence which prompt to a further knowledge of His character. Casting around for the sources of a knowledge of the moral attributes of the Deity, his well disciplined mind cannot fail to assent readily to the fullness of the testimony by which the sacred scriptures are recommended as God's revelation of his own character and the character of man; his duty, his destiny. He cannot fail to perceive the surpassing beauty of its sacred code of morality based upon the principle, 'Thou shalt love thy neighbor as thyself.' With his characteristic habits of deduction, he follows this principle into its minutest ramification—sees how it is calculated to refine the heart of man from selfishness—to encourage an expansive benevolence—and to heal the disorders and restore the harmony of the social system; and thus, contemplating its intrinsic excellence, he will be disposed to render a more cheerful obedience to its requisitions, than he would receive it as a mere dictate of sovereignty."

"But the charge has been brought against these studies that they tend to encourage the spirit of infidelity. Without entering upon a formal refutation of this charge, I would only ask, is it reasonable that the man whose ruling passion has been the acquisition of knowledge—who has ever found its pursuit and especially its attainment, the source of his most refined and exalted pleasure, his faculties and powers enlarging and his desires increasing with their

every new gratification—the consciousness of his own littleness and weakness increasing, as at every ascending step up the mount of Science, the prospect opens wider and wider before him, until at its highest attainable point, he sickens at the thought of the boundless regions which he cannot penetrate. Is it reasonable that the man whose experience has been but a continually renewed testimony of the expansiveness of the human mind should adopt the cold, cheerless, desperate suggestions of infidelity! Shall he not rather welcome with an ecstasy of delight, that revelation which brings life and immortality to light, which assures him that in the new state to which he is hastening, his faculties for the acquisition of knowledge shall be enlarged, all obstacles shall be removed, and the work of the same Deity, the small insight into whose beauties here has afforded him such ineffable delight, shall constitute the theme of his studies through the wasteless ages of eternity."

Dr. Ford was actively engaged in the work of disseminating the Bible among men. He was for a number of years, even to the hour of his death, President of the Augusta Bible Society. He was for a number of years Senior Warden of the Vestry of St. Paul's Episcopal church, in which faith he died.

It has been seen that the deceased was a son of the distinguished jurist, it was therefore but natural to find him applying such rigid rules in the weighing of testimony. In lecturing to his class he said, "so he who advances into the great temple of Nature, who comes up there with his bold interrogations, who seeks to be initiated into her sublime mysteries, to behold the revelation of her beauties, to hear the melody of her harmonies, to obtain that knowledge of her secret springs which will give him power and place and authority among his fellow men, must chasten himself with

a discipline severe as these benefits are excellent. He must come laying aside his idle opinion and prejudices, his false notions of the nature of things which he may have contracted in the course of an imperfect education. He must come manifesting that virtue so essential to the philosophic character—the virtue of humility; with the open-mindedness, the docility of a little child, must he come to be taught. * * * Again, with an impartiality that is willing to do as severe justice to his own opinions as to those of others, the student of these sciences cautiously weighs all the evidences for and against any proposed fact or opinion, determined to abide by the law and the testimony, even should these demand the recantation of his own opinions formally and publicly acknowledged. This magnanimous trait of character, which will thus postpone its own temporary fame to the grand interests of science, you will find illustrated in the history of some of the greatest men that have ever lived—it marks the man who has been refined from selfishness by a constant intercourse with the sublimities of Nature."

The most prominent trait of character possessed by the deceased was benevolence. The poor, who had none of this world's goods with which to recompense his valuable services, found in him a friend and benefactor. No hour, day or night, no season of heat or cold, rain or snow, deterred him from answering the call of the sick-poor. It was only necessary that he be informed that there was disease and anguish to be relieved, with cheerfulness and alacrity he wended his way to the bedside, and with unbounded courtesy and kindness he listened to recitals of ills of mind and body, comforting the distressed, binding up their wounds, healing their diseases. This gratuitous service to the poor was continued when in the midst of a large and lucrative

practice, which often caused him unostentatiously to respond to the call of the poor and needy, rather than the demands of the affluent. Truly may it be said of him:

"Far may we search before we find
A heart so manly and so kind;
But not around his honor'd urn
Shall friends alone and kindred mourn;
The thousand eyes his care had dried,
Pour at his name a bitter tide;
And frequent falls the grateful dew,
For benefits the world ne'er knew."

Not content with illustrating this virtue of benevolence in his daily life, we find him teaching his students to appreciate the luxury of doing good. To them he said: "The corrupting love of money, and a contracted selfishness, have no natural companionship with the noble enthusiasm which burns in his heart. If this were their only fruit, this should recommend them to your most favorable notice; for the virtue of benevolence lies at the foundation, while it forms the crowning glory of the medical character. Without this heaven born principle there can be no enlightened appreciation, no devoted performance of the duties of that profession, whose ministrations have been represented by one not of our profession, as a beautiful, but humble imitation of those of the Divine Providence. Its dispensation is indeed one of mercy. * * * * Devote yourselves, then, to these studies and to all other means tending to mature this spirit of philanthropy, if you would be prepared to redeem all those high expectations which will be entertained of you, as members of this noble profession; for to it has society ever looked for instances of devoted self-sacrificing humanity. And they have not looked in vain; for, notwithstanding the cavils to the contrary, the constant occupation of the mind in devising means for the relief of human suffering,

and the repeated exercise of an active beneficence, do tend most manifestly to strengthen the spirit of benevolence within the bosom of the physician, and the annals of philanthropy, in every age, display those names which are alike the boast and glory of our profession."

Dr. Ford was a charitable man. To the poor and needy his life was a daily ministration of mercy—dispensing to the utmost of his ability whatever to him seemed needful to the suffering. His was

> "The ear inclined to ev'ry voice of grief,
> The hand that op'd spontaneous to relief,
> A heart whose impulse stayed not for the mind
> To freeze to doubt what charity enjoin'd,
> But sprang to man's warm instinct for mankind."

The deceased was one of the most polished of men, indeed he was a man of extraordinary refinement. Simple and dignified in manners, easy of access, and social in demeanor, he was the centre of a throng of admiring friends whenever he entered the social sphere. And yet he was a man of wonderful humor. It was of the type portrayed by Carlyle in speaking of Richter: "It has such witching turns; there was something in it so capricious, so quaint, so heartfelt. The essence of humor is sensibility, warm, tender fellow feeling with all forms of existence. * * * True humor springs not more from the head than the heart; it is not contempt, its essence is love; it issues not in laughter, but in still smiles, which lie far deeper. It is a sort of inverse sublimity; exalting, as it were, into our affections what is below us, while sublimity draws down into our affections what is above. The former is scarcely less precious or heart affecting than the latter; perhaps it is still rarer, and, as a test of genius, still more decisive. It is, in fact, the bloom and perfume, the purest effluence of a deep, fine, and loving nature; a nature in harmony with

itself, reconciled to the world and its stintedness and contradiction, nay, finding in this very contradiction new elements of beauty as well as of goodness."

Dr. Ford was a man of extensive general literary attainments. As a part of his intellectual character he possessed an insatiable thirst for knowledge. This trait showed itself even as a young man, and grew with his growth, and continued unabated to the hour of his death. He never rested with his attainments, but was constantly, seeking yet more knowledge. When at home he was usually to be found deeply engaged in reading books It was a matter of surprise to his friends that amid such an extensive practice of medicine he could find time for such general reading as was apparent in his conversations. He made it a rule to always keep some study before him as a recreation from the arduous duties of his profession, and affording rational enjoyment to his mind in times of leisure. Rest in work. He experienced the beauty of Goethe's idea of rest:

"Rest is not quitting
The busy career;
Rest is the fitting
Of self to one's sphere.

"'Tis the brook's motion,
Clear without strife;
Fleeting to ocean,
After this life.

"'Tis loving and serving
The highest and best;
'Tis onward, unswerving
And this is true rest."

He was a man of keen powers of perception, and of a thoroughly analytical turn of mind. Possessing a wonderful memory, he stored his capacious brain with the excellent

general readings which he had made, and could astonishingly entertain his friends upon political economy, general literature, classical lore, science, history or poetry as readily as upon medical philosophy. It may truly be said of him that he possessed all the qualities of a great and commanding intellect, qualified for grand achievements in whatever direction his grasping, penetrating mind might choose to exert its marvelous faculties. He found his richest enjoyment in study. With Fletcher he could say:

> "Give me
> Leave to enjoy myself. That place that does
> Contain my books, the best companions, is
> To me a glorious court, where hourly I
> Converse with the old sages and philosophers;
> And sometimes for variety, I confer
> With kings and emperors, and weigh their counsels;
> Calling their victories, if unjustly got,
> Unto a strict account; and in my fancy,
> Deface their ill-placed statues. Can I then
> Part with such constant pleasures, to embrace
> Uncertain vanities? No, be it your care
> To augment a heap of wealth! It shall be mine
> To increase in knowledge."

But let this "old man eloquent," tell in his own inimitable way the beauty, joy, and blessings of study. To his class he said:

"Cherish then, gentlemen, with the most scrupulous care, the very first motions toward an attachment to any of these sciences—welcome it as an impulse connected with your highest good; for this attachment once formed, will insensibly ripen into an enthusiastic devotion to studies which will, ever after, furnish you with rational and uncorrupting amusement—which will save you from the tedium of idleness—from the uneasiness of a vacant mind, which will

open before you sources of pleasure pure, rich, inexhaustible as the treasures of Nature—which will save you from the agitation and wildness of passion, and tranquilize and reassure the mind, when it may have been ruffled by the collisions of business, or smitten by the sorrows of life. In the language of Cicero, 'These elegant studies! they will not only nourish and strengthen your minds in youth, they will please and soothe you in your declining age; they will adorn your prosperity, they will console your adversity.' They will bring you into that sacred communion with truth, which ever disposes to severe virtue; they will reveal and display before you the high mysteries of Nature and her secret, reserved and chaste beauties; the contemplation of which shall expand the mind and soften and refine the heart, and dispose you to the admiration of whatsoever is noble and elevated, and beautiful, and consistent, and truthful in human character, and to the practice of 'whatsoever is pure, lovely and of good report.' Above all, they will cherish within your bosoms the spirit of piety, of devotion, and of that expansive benevolence which, wisely identifying its own interests with the interests of all around it, sheds about its own pathway nothing but peace and blessing—and thus will these studies aid most effectually in preparing you for the performance of your duty—your whole duty, to your God and to your fellow man."

As a mark of high appreciation of his intellectual attainments, the University of Georgia conferred upon Professor Ford the honorary degree of LL. D. In thus honoring this grand old man, the distinguished University in the act signally honored itself.

But it was as a teacher of medicine that he achieved greatest renown. As a lecturer he was charming. The students were anxious for his lecture-hour to be announced. He was

singularly eloquent, and remarkably gifted in presenting his views to his classes. He had mastered the subjects presented for the consideration of his students, and therefore he addressed them with that calmness, dignity and self-possession which springs only from the consciousness of having thoroughly investigated his subjects and mastered their intricate problems. Sometimes, in the midst of profound dissertations upon medicine, he would enliven his classes by sallies of wit, or an illustrative anecdote, which was peculiar to himself. His mind was an encyclopædia, and from this vast store-house of facts and experience he went daily for illustrations of his lectures. He possessed the classical scholarship of the highest and brightest of our profession, and had all the charming grace and refined diction of a Watson, a Trousseau or a Fothergill. He had fathomed the deepest depths of the God-like science of medicine, and aerie-like had soared into the ethereal heights of the collateral sciences. He was a teacher of medicine for fifty years. With the exception of a few years as Professor of Chemistry, the whole time of his Professorship was devoted to the Principles and Practice of Medicine. As a teacher for half a century, what an influence he must have exerted upon the medical opinions of the two or more thousand doctors who had sat as students at his feet that they might learn of him.

Dr. Ford was an expert in epidemic diseases, and rendered valuable services to physicians of his own city, and of the surrounding country, in aiding in making an early and accurate diagnosis in these diseases. In the epidemics of yellow fever in Augusta, in 1839 and 1854, he rendered conspicuous services to the sick and afflicted. After these epidemics had ended he investigated the origin and causes thereof, and firmly but respectfully insisted that in each of these epidemics the disease originated in neglect upon

the part of the city authorities, to expeditiously remove decomposing filth beyond the city limits.

During the war Dr. Ford was constantly engaged in the military service of the Confederate States government, being surgeon of the first Georgia hospital at Richmond, Virginia. This position he held to the end of the war. When he left his home to render this noble service to his country he was sixty years of age. His skill, his kindness, his tender care of the sick and wounded, won the love and gratitude of the soldiers, and all of them parted from him with regret and sorrow.

Dr. Ford has done more to delineate the natural history, and to correctly elucidate the pathology and therapeutics of malarial fevers than any physician in American. He contributed articles upon these subjects to the Southern Medical and Surgical Journal, from 1837 to 1845, inclusive. These papers evidence a deep and critical research into the opinions and teachings of the classical authors to that date, and the author boldly contradicts the opinions then current with the profession, and earnestly calls upon the medical men to give heed and study to this important disease, and the treatment thereof. These papers are among the classics of the profession on that subject, and have been freely and frequently quoted from the time they were printed to the present day. All of the papers presented to the profession by Dr. Ford evidence a profound and critical study of the subjects discussed by him. The last paper written by him was presented to this Association in 1880. His subject was "Organic Affinity." This paper was considered by competent judges to be a masterful one. At the time it was written, its author was seventy-nine years old.

The deceased was distinguished as a sanitarian, and took an active interest in the improvement of the sanitary con-

dition of Augusta. For a number of years he ably filled the position of President of the Board of Health of Augusta. His administration of this trust—as, indeed, all others—was marked by dignity, courtesy, ability, and unswerving fidelity to duty. When he resigned his position the Board unanimously requested him to withdraw the resignation tendered. Failing to induce him to continue the discharge of his official station, the Board of Health and the City Council unanimously adopted resolutions expressing their great regret at the loss of so valued an officer, and attesting their appeciation of his stewardship.

Thirty-five years ago this Association was organized in the city of Macon. About eighty of the most distinguished medical men of this State were present and enrolled as members. From this brilliant assemblage of physicians, Dr. Lewis D. Ford was the one selected to be honored as the first President of the Association. The inherent modesty, dignity and impartiality of the man rendered him a most valuable officer, and well and worthily he illustrated the wisdom of the choice of his professional brethren.

Philosopher as he was, it is needless to state that death had no terrors for him. For years prior to his decease, he would calmly and beautifully speak of death as a thing not to be shunned or feared, but to be regarded by the Christian man as the crown of life. Ever ready for the summons, he continued the practice of his profession until smitten by disease several months prior to his death. Unterrified he approached "the dark, dark river," having obeyed the injunction to,

> "So live, that when thy summons comes to join
> The innumerable caravan, that moves
> To that mysterious realm, where each shall take
> His chamber in the silent halls of death,

Thou go not like the quarry slave at night,
Scourged to his dungeon; but sustain'd and sooth'd
By an unfaltering trust, approach thy grave,
Like one who wraps the drapery of his couch
About him and lies down to pleasant dreams"

The death of such a man as Dr. Lewis D. Ford, as was to be expected, cast a gloom over the city in which he was so much loved. There were universal expressions of grief at the announcement of his death. The citizens of Augusta felt that the city had sustained an irreparable loss. His fellow citizens all united to do honor to his memory. His honor, Mayor May, called the city council in special session, and feelingly and sorrowfully announced the death of the beloved physician. The city council unanimously adopted the following resolutions:

Resolved, That in the death of Dr. Lewis D. Ford this community has lost one of its most useful and respected citizens, the medical profession one of its brightest ornaments, society one of its most valued members. In every position to which duty called him he was always found true, zealous and faithful. In his family circle, in his social life, in his professional and political career he was the centre of affection, of friendship, of popularity; and in all these positions his death leaves an aching void, and a vacuum hard to fill.

Resolved, That this council, as a mark of respect to the deceased, attend his funeral in a body."

The Evening News, of Augusta, said: "Dr. Lewis D. Ford was not only a great and most eminent physician, honored by the profession all over the country, and loved by all who ever felt the touch of his inspiring hand, but he was a great and good man. * * * * His memory will ever be enshrined in the grateful hearts of his people. No service was too arduous for his brain and hand, and no trust

was so high that the people of Augusta would not willingly and gladly bestow upon such a man."

The Chronicle and Constitutionalist contained the following editorial:

A GOOD SAMARITAN.

"The relics of Dr. Lewis D. Ford have been consigned to the bosom of the earth. His memory will survive in a thousand good deeds that were the emanation of a lofty spirit and not done for effect. Indeed few persons, save those who were recipients of his care, bounty and charity, not to speak of professional skill, have any idea of the multitude of his benefactions. One of the most distinguished of Dr. Ford's contemporaries and a brother physician informs us that the leading characteristic of his life was unselfish devotion to his fellow men—the alleviation of their physical suffering, the binding up of their spiritual wounds, the promotion of their virtues, with less regard for compensation and reward than any man with whom he was acquainted. He believes Dr. Ford did more good for less money than any man in the community. He never thought of the "filthy lucre." It made no difference whether a man was rich or poor. If he paid him for his services all well and good; if not, the same. Consequently he dies leaving a small estate in this world but will inherit a large one in the next. It made no difference whether a person paid him or not, though able to do so, he never failed to serve him when in distress. It is probable that he never thought the second time of any debt due him.

"Here then was a good Samaritan, who had lifted himself above the petty things of mortality, in many respects, and, like Abou Ben Adhem, grew especially dear to God because,

neglectful of himself, he had loved his fellow men and served them faithfully, with all his power, for the love of their Maker.

"No eloquence of tongue or pen can surpass this simple revelation of fact. It tells the whole story of a noble spirit and needs no embellishment of poet or rhetorician. There are few men of whom this can be truly said, and therefore it may be concluded that Dr. Ford's best epitaph is the plain statement of his well spent life."

The Faculty of the Medical College of Georgia, of which he was one of the founders and most honored and accomplished professors, adopted the following resolutions:

"*Resolved* 1st, That in the death of Professor Ford, one of its founders and for over fifty years one its most distinguished and valuable Professors, this, the Medical Department of the University of Georgia, has lost the revered and beloved Nestor of our Faculty; that in his long and useful life were beautifully illustrated all that we could desire to emulate as the true and honorable physician, the good citizen, the pure man and the Christian gentleman—that he will long be remembered as one of the founders of medical science in our State, and that his influence will long be felt as an early cultivator of correct methods of medical reasoning, and as one who has contributed largely by his labors to the founding of a sound medical philosophy not only in his own State but through the entire South.

Resolved 2d, That, in accepting submissively to his death, both as a decree of nature and of a wise and merciful Providence, we yet mourn our separation from him and deplore his departure from our midst, as the loss of a wise counsellor, noble exemplar and ever genial, loved and loving companion and friend."

Thus, full of years; rich in the honors of a life spent in the

service of God and his fellow men our beloved first President "fell on sleep," leaving to his family the precious legacy of a good name—which is far above riches; and to the medical profession an example which shall redound to the honor and glory of man.

"Can that man be dead
Whose spiritual influence is upon his kind?
He lives in glory; and his speaking dust
Has more of life than half its breathing mould."

JAMES M. CARLTON, M. D.

By EUGENE FOSTER, M. D., Augusta, Ga.

"What shall he be ere night? Perchance a thing
O'er which the raven flaps his funeral wing."

Twelve months ago at our meeting in Athens there was present a recently elected member of our Association, full of buoyant hope of years of useful professional life, with prospects of living to green old age, and attaining the highest honors which could be bestowed upon the devotee of that profession whose daily task it has ever been to minister to the sick and suffering sons of Adam. Within four months after the Association had adjourned, James M. Carlton had become to us only a memory. The silver chord of life had been loosened. Cold in death's embrace was

"The vase of earth, that trembling clod
Ordained to hold the breath of God."

How inexpressibly sad thus to see the joyous, hopeful, ambitious, trusting young man of yesterday, but the dust of the earth to-day. Life gone, opportunities of noble work snatched away, aspirations for usefulness vanished, possibilities untested, hopes and yearnings of good deeds to suffering man untried, unfulfilled.

What an interesting time in the life of the young physician is that of his receiving his diploma. This is the trying time of life. Will he rest content with college acquire-

ments and imagine that his fortune is made, or will he regard this step as only the first mile stone which marks the long, tedious journey toward professional eminence. The deceased took this latter view of the matter.

Having qualified himself by preliminary education, he, under the guidance of his father, Dr. J. B Carlton, a distinguished physician of Athens, began the study of medicine. In his daily studies. prosecuted in his father's office, he found much pleasure and interest, and when the time came for entering a medical college,the deceased was well learned in the elementary principles of the science of medicine. Studious in his habits, together with a retentive memory, he stored his mind with the teachings of the professors and the writers of text-books.

Dr. Carlton graduated from Jefferson Medical College in March, 1881, and immediately thereafter he returned to Athens to take upon himself the arduous duties which the medical profession places upon its followers.

During the last month of his attendance upon the lectures of Jefferson Medical College, a great shadow and gloom fell across the pathway of our young brother. His father died suddenly and thus was the young man robbed of his best friend and counsellor. This sad event seemed to yet more fully determine the son to fulfill the high hopes and expectations of his relatives and friends. He therefore bent every energy to discharge the duties of his new position. His father's friends and patrons recognized in the young Doctor a man of merit, and he rapidly acquired a large and lucrative practice. Full of the ardor of a young man in love with his profession, he responded to every call made upon him day or night, feeling that his strong constitution rendered him capable of responding to every demand made upon it. During the three months immediately preceding

his demise, he had been almost constantly engaged in the work of his profession. On the 15th of August, 1883, he was attacked with dysentery, and in four short days he died. In his death the city of Athens has lost an honored and useful citizen, the poor and needy an ever ready friend and benefactor, his friends an accomplished gentleman and genial associate, his family an honored son and devoted brother, this Association a valued member. Observing the sad death of our brother, we ask,

"For what is life? At best a brief delight,
A sun scarce bright'ning ere it sinks in night;
A flower at morning fresh, at noon decayed,
A still, swift river, gliding into shade."

DR. ADOLPHUS S. FOWLER, M. D.

By CHARLES P. GORDON, M. D., Dalton, Ga.

Dr. Adolphus S. Fowler died of consumption at his home in Ringgold, Ga., on the 7th of October, 1880, in the fiftieth year of his age. During his protracted illness his distressed wife and anxious children waited at his bedside with a ministry touchingly beautiful. There was that in his nature which attracted the affections of his immediate family to entwine themselves about him very closely, and with peculiar tenderness.

Dr. Fowler possessed a decided aptitude for his chosen profession. What is predicated of the poet, with at least partial truth, in the trite aphorism, "the poet is born, not made," can be predicated with almost equal truth of the prose-writer, the physician, the advocate, the judge, and even the divine. Dr. Fowler made no mistake in the selection of a profession. He was singularly well adapted to it, and eminently successful in it. He graduated with distinction at the Jefferson Medical College, Philadelphia, at the close of 1855. He came from the lecture-room well equipped for his work—a young man of vigorous and well trained intellect, and having enjoyed, and studiously improved, liberal professional advantages. In after years, he kept fully abreast with the foremost in the progressive science to which he was devoted. He had a clear insight into the temperaments of his patients, and his professional treatment was based upon their mental and physical constitutions, as well as upon his thorough knowledge of medical science. His pres-

ence in the household invaded by disease dispelled alarm and established confidence; and whatever the result of the case, the doctor was thereafter a trusted and valued friend in that household. Archbishop Whately, in his lecture upon the influence of the professions, says that the members of the medical profession were especially prone to infidelity and even to atheism. The life and character of the subject of this sketch affords a striking contradiction to this statement; his faith took firm and vigorous hold upon the facts of the gospel, his character was fashioned upon its precepts, and its spirit pervaded his nature; no shadow of infidelity clouded his Christian confidence. or darkened his Christian hope, he lived and died a Christian.

Dr. Fowler served with distinction in the Confederate army in the late war, as surgeon of the 39th Georgia Regiment, and senior surgeon of Cumming's Brigade, where his ministrations to the sick, his skill in surgical operations, and his administrative ability as a medical officer will be remembered by a grateful soldiery. If, then, to have been conspicuously successful in his profession; if to have been universally esteemed where known, an upright man and a sincere Christian, if to have been felt for good at all points, and in all relations in which he touched society, if to have so lived as not to fear to die—if these things constitute a successful life, then was Dr. Fowler's life eminently successful.

The unclouded mind of the dying physician was watching the ebbing tide of his own life, and the unfaltering faith of the dying Christian was looking calmly into the great beyond, in the very article of death. When the clock struck seven he said, "In half an hour I will be dead," at twenty-five minutes past seven his spirit departed. Then and thus closed a life valuable to all the community in which it was spent, and invaluable to his family.

STERLING COMBS EVE, M. D.

By EUGENE FOSTER, M. D., Augusta, Ga.

Entered into rest February 8th, 1884, Sterling Combs Eve, M. D., of Augusta, Georgia.

The decesed was born in Augusta, August 16th, 1839. His early education was acquired at private schools in his native city, when he was subsequently sent to Emory College from whence he was graduated in 1860. Returning to Augusta heat once began the study of medicine in the office of his distinguished father, Dr. Joseph A. Eve. After the careful, skillful preparatory study of medicine, which had been actively supervised by his learned father, Sterling Eve was graduated M. D. by the Medical College of Georgia, in March, 1861.

Soon after receiving his diploma the war came on, and true to his State, he volunteered as a private soldier to do battle for the interests of his people. With a musket on his shoulder he went to the front with the first regiment of Georgia Volunteers. After serving as a private soldier for one year he was tendered a position as assistant surgeon in the army. He accepted the position thus tendered, and was assigned to duty in the hospital in Richmond. Virginia, and upon the battlefields near that city. Wherever he served his service was marked by faithful, fearless discharge of duty. To the sick and wounded soldiers he was indeed a minister of mercy. Tender and gentle as a woman, he

sympathized with and cheered the desponding hearts of the homeless followers of the lost cause. Humane and skillful, he did all in his power to alleviate their sickness and heal their wounds.

After the war was ended Sterling Eve returned to his native city and actively began the practice of his profession. In his entry upon professional life he was remarkably successful, having in a few years acquired a large and lucrative business. While engaged in the general practice of medicine he followed the bent of his father's inclination, and was especially desirous of confining his attention to the practice of gynecology and obstetrics. To a very large extent this ambition was gratified, for as a young man he did a large and successful practice in these special fields. His practice increased year after year, until he had as large patronage as almost any physician in Augusta. He had attained to that position so beautifully expressed by the venerable Dr. L. D. Ford when he said, "What station in society so enviable as that attainable by the thoroughly educated, skillful, humane, self-sacrificing physician? With his mind enlarged by philosophy to esteem his profession less valuable as a means to fortune than as the means of doing good, not careless of his just recompense, yet satisfied with the richer and better part of it - content that this recompense should be in relation with the nature of his services—acknowledging it to be right, that the exercise of a high benevolence should find its appropriate reward in the luxurious consciousness of doing good."

While upon the verge of attaining to high professional position in his community five years prior to his death, his health was suddenly and unexpectedly impaired—in fact he became an invalid and never regained his health. As an intelligent physician he knew that he would never again

be the strong, vigorous, healthful man of yore, but that he was to the contrary doomed to a life of pain and disease. It was here that he evidenced that remarkable will power which elicited the astonishment and admiration of those who observed its exercise. With such a cloud hanging over life most men would have given up all hope of usefulness to self or fellow man—life would have been a burden, and the daily, hourly contemplation or fear of death would have engrossed their minds. Not so with Sterling Eve. No physician ever continued to work more cheerfully, diligently, devotedly than did the deceased. Daily, hourly, he discharged the arduous duties of his profession and continued to work actively until four weeks prior to his death. The world has wondered that Schiller produced his mightiest tragedies when in the midst of physical agonies; that when battling with a deadly disease Mozart composed his best operas, and last of all his "Requiem;" that it was the heavy hand of sorrow that seemed to stimulate Lamb to the production of some of his best works; that Handel immortalized his name by producing music of sweetest notes when palsy and suffering warned him of approaching dissolution; and that Darwin could have said, "If I had not been so great an invalid, I should not have done nearly so much as I have been able to accomplish." So Dr. Eve's friends will wonder how he could have exercised such amazing will-power as to enable him to have, with cheerfulness and zeal, gone about daily in the discharge of high professional duties with the very pall of death encompassing him. Sterling Eve realized the philosophy of Epictetus, who said:

"We do not choose our own parts in life, and have nothing to do with those parts; our simple duty is confined to playing them well. * * * * * * You must teach men that happiness is not where, in their blindness and

misery, they seek it. It is not in strength, for Myro and Ofellius were not happy; not in wealth, for Crœsus was not happy; not in power, for the consuls were not happy; not in all these together, for Nero and Sardanapalus and Agamemnon sighed and wept and tore their hair, and were the slaves of circumstances and the dupes of semblances. It lies in yourselves; in true freedom, in the absence or conquest of every ignoble fear; in perfect self-government; and in a power of contentment and peace, and the even flow of life amid poverty, exile, disease, and the very valley of the shadow of death."

But the night came at last. In his home of comfort and elegance, surrounded by the loving, noble wife, who had so tenderly and devotedly nursed him in his long years of suffering, by five little children whom he so fondly loved, by an aged, doting father, loved brothers and sisters, his life went out as quietly as the gentle breeze of summer. Thus, at the age of 44—in the midday of life— he laid down his work and departed from among the children of men. He is not dead, for

> "To live in hearts we leave behind,
> Is not to die."

Sterling Eve lives in the hearts of those whom he had daily and hourly tried to serve; lives in the hearts of those to whom he had brought health and healing as he daily ministered to their suffering; lives in the hearts of the widow and orphan to whose call of distress he never turned a deaf ear; lives in the hearts of his friends as a pattern of a gentleman and citizen; lives in the memory of his professional brethren as a conspicuous example of the urbane, devoted, self-sacrificing physician. To his aged father, to brothers and sisters, to the children he loved so well; to the mourning and well nigh heart-broken widow I know that I

can truly say that the heartfelt sympathy and condolence of every member of this Association is tendered. Let them, then, even amid their gloom and sorrow, remember that though the loved one is gone, yet,

"The dead are like the stars by day,
Withdrawn from mortal eye,
Yet holding, unperceived, their way
Through the unclouded sky."

EDWARD HENRY WRIGHT HUNTER.

By EUGENE FOSTER, M. D., Augusta, Ga.

Edward Henry Wright Hunter, M. D., was born in Louisville, Jefferson county, Georgia, October 13, 1822. He received his education at the Louisville Academy, and at Midway Academy, near Milledgeville, Georgia.

His medical education was acquired at the medical department of the University of New York, from whence he was graduated M. D, in 1844. After graduating in medicine he returned to Louisville, Georgia, and entered actively into practice. Here he was eminently successful, having quietly and unobtrusively worked his way to the front rank among the best doctors in the county. He was popular among the people of Jefferson county, and highly esteemed as a man of strict integrity and a progressive, public spirited citizen. As a physician, he was urbane, attentive, self-sacrificing, yet at the same time inflexible in requiring his prescriptions to be carried out to the letter. It is said of him by those who knew him best, that he was a man of strictest integrity as a physician, and that by his gentlemanly deportment and friendly consideration of the feelings of others, as well as the charity which ever abided with him, he daily illustrated and adorned the profession of medicine. He was gifted with a strong mind and positive character, which secured for him a leading position in his section, and the admiration and respect of his acquaint-

ances. Dr. Hunter was a man of modest, dignified demeanor, and his home life was characterized by gentleness, hospitality, quietude. He was a man who sought to keep abreast of the advancements in his profession. His reading was marked by a desire to ascertain the truth of whatever subject he was investigating. Not an enthusiast, ready to implicitly believe everything he read—he was rather the philosopher who sought to delve deeply into matter, and bring truth to light. In conversation, he readily stated his opinions, beliefs--yet this was done with none of the air of dogmatism. He listened attentively to what was said in the course of a conversation, and promptly expressed his views in a gentle, affable manner. He was ready at all times to aid his brother physician in whatever way he could. He was especially considerate of and kind to young physicians.

For a number of years Dr. Hunter suffered from dyspepsia. It did not, however, render him morose, sour, crabbed, as is usual with the dyspeptic. To the contrary, he seemed contented and cheerful. The deceased attested his patriotism during the late war by entering the army as a surgeon. He was a brigade surgeon during the latter part of the war. In this position he rendered valuable service to his country, and the officers and privates of the brigade appreciated his humane and skillful services.

Dr. Hunter had long been a member of this Association, he having joined it in 1857. He did all in his power to advance its interest. He frequently laid aside his professional engagements, and repaired to the meetings of this Association. He did not often take part in the discussions. He was a listener rather than a debater. When, however, he rose to speak, his remarks evidenced a mind capable of knowing, appreciating and finding the merits of the subject discussed.

The deceased was a member of the Presbyterian church, and was regarded by his pastor and brethren as a meek and sincere Christian.

In 1851 Dr. Hunter married Miss Susan A. Heard, of Dallas county, Ala. His wife and six children survive him.

Dr. Hunter was taken sick June 18th, 1883, and died June 23d. The disease causing his death was pronounced to be collapse, following fecal impaction. In his demise his county, State, church and this Association lost a valued, useful, honored member. After life's fitful fever, he sleeps well.

Roll of Members.

ROLL OF MEMBERS

OF THE

MEDICAL ASSOCIATION OF GEORGIA,

1884.

ARRANGED BY CONGRESSIONAL DISTRICTS.

ABBREVIATIONS—P., President; V-P., Vice-President; S., Secretary; C-S Corresponding Secretary; T., Treasurer; O.. Orator; C., Censor—indicating the offices the members hold or have held.

☞ *Members are particularly requested to notify the Secretary promptly on making any change in their Post-offices.*

☞ *The Secretary will esteem it a favor if any member will write him at once on noticing any inaccuracy or omission in the roll.*

FIRST DISTRICT.

NAME.	POST-OFFICE.	COUNTY.	ADMITTED.
Charlton, T. J. (C.)	Savannah	Chatham	1862
Duncan, Wm. (T)	Savannah	Chatham	1868
Elliott, W. H.	Savannah	Chatham	1881
Houston, J. P. S	Savannah	Chatham	1873
Hummel, Geo. C.	Savannah	Chatham	1884
LeHardy, J. C. (T., V P., P.)	Savannah	Chatham	1868
Martin, John D.	Savannah	Chatham	1867
Norton, R. G	Egypt	Effingham	1872
Nunn, R. J. (C., V-P.)	Savannah	Chatham	1867
Read J. B.	Savannah	Chatham	1851

NAME.	POST-OFFICE.	COUNTY.	ADMITTED.
Sample, C. L.	Cannoochee	Emanuel	1875
Shefftall, B. F	Savannah	Chatham	1878
Stone, Geo. H	Savannah	Chatham	1875
Thomas, J. G. (V-P., C, T.)	Savannah	Chatham	1867
Waring, J. J.	Savannah	Chatham	1853
Weichelbaum, J. H.	Savannah	Chatham	1884

SECOND DISTRICT.

Alfriend, E. W. (V-P.)	Albany	Dougherty	1852
Bruce, W. W.	Thomasville	Thomas	1881
Culpepper, J. T.	Boston	Thomas	1881
Dekle, Thos. S.	Thomasville	Thomas	1874
Dostor, B. R. (V-P.)	Blakely	Early	1873
Hillsman, P. L.	Albany	Dougherty	1871
Hopkins, J. G.	Thomasville	Thomas	1874
Hopkins, T. S.	Thomasville	Thomas	1873
McIntosh, T. M (V-P.)	Thomasville	Thomas	1875
Strother, Wm. A.	Albany	Dougherty	1867
Talley, H. M.	Nashville	Berrien	1875
Taylor, A. P.	Thomasville	Thomas	1873
Twitty, W. W.	Camilla	Mitchell	1871
Wethington, R. T	Thomasville	Thomas	1884

THIRD DISTRICT.

Bozeman, E. K.	Americus	Sumter	1877
Colding, C. H.	Hawkinsville	Pulaski	1882
Coleman, J. T.	Perry	Houston	1851
Fort, J. A.	Americus	Sumter	1883
Harris, M. W.	Perry	Houston	1854
Hawkins, S. B (V-P.)	Americus	Sumter	1871
Herman, J. D.	Eastman	Dodge	1884
Hicks, C. J. J.	Dublin	Laurens	1884
Hightower, R. H.	Dublin	Laurens	1884
Ingram, R. O.	Montezuma	Macon	1884
Jelks, N. P.	Hawkinsville	Pulaski	1882
Joiner, B. L.	Andersonville	Sumter	1882
Jordan, F. M.	Hawkinsville	Pulaski	1878
Logan, A. J.	Americus	Sumter	1882

NAME.	POST-OFFICE.	COUNTY.	ADMITTED.
Mathews, W. D	Fort Valley	Houston	1884
Miller, Geo. P	Byronville	Dooly	1879
Morgan, Y. H	Cochran	Pulaski	1871
Ross, B. L	Fort Valley	Houston	1884
Tate, R. H	Snow	Dooly	1879
Smith, A. A	Hawkinsville	Pulaski	1875
Smith, J. B	Perry	Houston	1870
Taylor, A. R	Hawkinsville	Pulaski	1878
Walker, T. F	Cochran	Pulaski	1859
Walker, T. D	Cochran	Pulaski	1882

FOURTH DISTRICT.

Bardwell, E. L	Talbotton	Talbot	1872
Beasley, Jas. A	West Point	Troup	1884
Bullard, W. L	Columbus	Muscogee	1882
Calhoun, A B	Newnan	Coweta	1874
Cole, J. F	Carrollton	Carroll	1884
Fitts, W. W	Carrollton	Carroll	1872
Griggs, A. W. (o., v-p. c)	West Point	Troup	1866
Griggs, J. W	West Point	Troup	1878
Grimes, Geo J	Columbus	Muscogee	1872
Leitner, C. B	Columbus	Muscogee	1852
Mitchell, Thos. S	Hamilton	Harris	1872
Moore, J. T	Whitesburgh	Carroll	1878
Philpot, W. H	Talbotton	Talbot	1857
Slaughter, J. T	Villa Rica	Carrollton	1859
Smith, C. D	Newnan	Coweta	1872
Stanford, F. A	Columbus	Muscogee	1849
Taylor, J. P	Senoia	Coweta	1859
Wisdom, F. L	Buena Vista	Marion	1873

FIFTH DISTRICT.

Alexander, J. F. (p, c, v-p.)	Atlanta	Fulton	1849
Anderson, W. A J	Oxford	Newton	1873
Armstrong, W. S	Atlanta	Fulton	1866
Baird, Jas. B (s. o.)	Atlanta	Fulton	1872
Bizzell, W. D. (v. p.)	Atlanta	Fulton	1882
Blincoe, A. G	Atlanta	Fulton	1882

NAME.	POST-OFFICE.	COUNTY.	ADMITTED.
Boring, Jno. M. (V-P.)	Atlanta	Fulton	1856
Brown, A. P.	Atlanta	Fulton	1859
Calhoun, A. W. (V-P, C., P.)	Atlanta	Fulton	1874
Connally, E. L. (C.)	Atlanta	Fulton	1860
Cotter, R O.	Atlanta	Fulton	1882
Crawford, G. G. (V-P.)	Atlanta	Fulton	1859
Divine, K. C.	Atlanta	Fulton	1882
Duncan, J. W.	Atlanta	Fulton	1883
Earnest, J. G.	Atlanta	Fulton	1882
Elkin, W. S.	Atlanta	Fulton	1882
Evans, W. W.	Oxford	Newton	1872
Faver, Paul	Fayetteville	Fayette	1873
Gaither, Henry	Oxford	Newton	1851
Gaston, J. McF.	Atlanta	Fulton	1884
Gray, James A. (S)	Atlanta	Fulton	1882
Gwyn, J. P.	High Shoals	Walton	1883
Hamilton, J. L.	Stone Mountain	DeKalb	1859
Hobbs, A. G.	Atlanta	Fulton	1882
Howell, D. H.	Atlanta	Fulton	1878
Jarnagin, W. C.	Atlanta	Fulton	1882
Johnson, J. M.	Atlanta	Fulton	1866
Lallersted, T. L.	Pano'a	DeKalb	1868
Logan, J. P. (P.)	Atlanta	Fulton	1857
Lancaster J. F.	Atlanta	Fulton	1884
Longino, T. D.	Palmetto	Campbell	1871
Love, Wm. Abram (V.-P.)	Atlanta	Fulton	1866
Miller, H. V. M.	Atlanta	Fulton	1851
Mitchell, T. J.	Griffin	Spalding	1884
Moore, W. C.	Clarkston	DeKalb	1861
Nash, D T.	Lovejoy	Clayton	1878
Nicolson, W. P.	Atlanta	Fulton	1880
Noble, G H.	Atlanta	Fulton	1883
O'Brien F. H.	Atlanta	Fulton	1882
Olmsted J. C.	Atlanta	Fulton	1878
Owen W. G.	Atlanta	Fulton	1868
Parks, W. B.	Atlanta	Fulton	1882
Perry, A. C.	Covington	Newton	1878
Pinson, A. J.	Atlanta	Fulton	1878
Pool, W. H.	Douglassville	Douglass	1883

NAME.	POST OFFICE.	COUNTY.	ADMITTED.
Powell, T. S. (V.-P.)	Atlanta	Fulton	1857
Quillian, C. C	Atlanta	Fulton	1884
Roach, E. J	Atlanta	Fulton	1857
Roach, E. W	Atlanta	Fulton	1882
Roy. G G	Atlanta	Fulton	1878
Scott, H. F (o.)	Atlanta	Fulton	1879
Selman, J. L	Douglassville	Douglass	1882
S irling, W. L	Atlanta	Fulton	1878
Taliaferro, V. H. (V.-P.)	Atlanta	Fulton	1857
Taylor, R H	Griffin	Spalding	1879
Todd, J. S. (o. c.)	Atlanta	Fulton	1872
Westmoreland, W. F. (P.)	Atlanta	Fulton	1856
Whitley, T. R.	Douglassville	Douglass	1882
Word, R. C	Atlanta	Fulton	1855

SIXTH DISTRICT.

Alexander, L. B	Forsyth	Monroe	1877
Barron, R. B	Clinton	Jones	1884
Brown, R. M	Toombsboro	Wilkinson	1882
Callaway, J. A	Milledgeville	Baldwin	1882
Denson, E. J	Jeffersonville	Twiggs	1884
Duggan, J. H	Stephensville	Wilkerson	1884
Fearguson, E. G	Macon	B'bb	1882
Fielder, J. F	Irwinton	Wilkerson	1884
Fitzgerald, E	Macon	Bibb	1882
Gewinner, N G	Macon	Bibb	1884
Gibson, W. C	Macon	Bibb	1884
Gray, S. H	Barnesville	Pike	1871
Hall, Chas. H. (c.)	Macon	Bibb	1870
Hall, Kenan	Macon	Bibb	1881
Hammond, D. W. (V.-P.)	Macon	Bibb	1857
Head, J. M	Zebulon	Pike	1883
Heard, J. H	Walden	Bibb	1884
Holt, W. F. (V.-P.—P.)	Macon	Bibb	1867
Howard, H. L	Macon	Bibb	1884
Ilyurs, E. B	Macon	Bibb	1884
Johnson, J. C	Macon	Bibb	1875
Jones, L. M	Milledgeville	Baldwin	1880
Jordan, M. G. W	Culloden	Monroe	1874

NAME.	POST-OFFICE.	COUNTY.	ADMITTED.
Kenan, Thos. H. (V.-P.)	Milledgeville	Baldwin	1875
King, W	Irwinton	Wilkerson	1884
McHatton, H.	Macon	Bibb	1883
Moore, K. P. (V.-P.—O.—T —P)	Macon	Bibb	1871
O'Daniel, M. H. (O)	Milledgeville	Baldwin	1882
O'Daniel, Wm. (T. P.)	Bullards	Twiggs	1870
Powell, T. O	Milledgeville	Baldwin	1867
Rosser, W. A	Bolingbroke	Monroe	1884
Redding, J. H	Macon	Bibb	1882
Searcy, D. B	Bolingbroke	Monroe	1849
Slappey, J. G	Buzzard Roost	Twiggs	1875
Solomon, J. C	Bullards	Twiggs	1884
Stevens, J. P	Macon	Bibb	1873
Toole, W. J	Macon	Bibb	1884
Winchester, W. R	Macon	Bibb	1884
Whitaker, J. M	Milledgeville	Baldwin	1881
Williams, H. J	Macon	Bibb	1883
Wright, P. H	Macon	Bibb	1869

SEVENTH DISTRICT.

Anderson, R. B	Roswell	Cobb	1872
Ballinger, M. R	Floyd Springs	Floyd	1860
Battey, H. H	Rome	Floyd	1882
Battey, Robt. (C. P.)	Rome	Floyd	1859
Battle, R. J	Cass Station	Bartow	1879
Bivings, J. C	Dalton	Whitfield	1873
Calhoun, F. R. (V.-P.)	Euharlee	Bartow	1873
Clements, J. W	Subligna	Chattooga	1877
Culbertson, W. A	Cave Springs	Floyd	1850
Earle, E. P	Marietta	Cobb	1882
Gordon, C. P	Dalton	Whitfield	1861
Greene, J. G	Rockmart	Polk	1879
Harden, W. P	Smyrna	Cobb	1853
Haynes, M	Red Clay	Whitfield	1879
Holmes, G W. (V.-P.—P.—C.)	Rome	Floyd	1867
Holmes, J. B. S	Rome	Floyd	1872
Holmes, T. M	Rome	Floyd	1883
Hoyt, W. D	Rome	Floyd	1871
Humphries, J. R	Acworth	Cobb	1876

NAME.	POST OFFICE.	COUNTY.	ADMITTED.
Jones, J. W.	Rome.	Floyd	1879
Kendrick, W. S. (o.)	Dirt Town.	Chattooga	1874
Quinn, M.	Norton	Whitfield	1883
Richardson, E. H., Jr. (o.)	Cedartown	Polk	1878
Robertson, S.	Dallas	Paulding	1881
Shaw, T. M.	Coosaville	Floyd	1878
Wells, W. B. (c., v-p)	Red Clay	Whitfield	1873
Wright, A. W.	Cave Spring.	Floyd	1879

EIGHTH DISTRICT.

Alfriend, E. D.	Sparta	Hancock	1884
Anderson, D. E.	Madison	Morgan	1883
Bell, A. A.	Madison	Morgan	1858
Benedict, Sam'l C.	Athens	Clarke	1883
Brawner, W. M.	Lexington	Oglethorpe	1883
Burt, A. Moody	Sparta	Hancock	1883
Charlton, W. A.	Athens	Clarke	1883
Deadwyler, M. P., (v-p.)	Elberton	Elbert	1868
Gerdine, John (c)	Athens	Clarke	1882
Goss, J. H.	Fort Lamar	Madison	1877
Hale E. M.	Osceola	Oconee	1883
Hill, J. J	Washington.	Wilkes	1880
Hollingsworth, W. T.	Madison	Morgan	1857
Kennebrew, Henry	Athens	Clarke	1883
Lane, J. A.	Washington	Wilkes	1880
McCleaky, G. L.	Athens	Clarke	1857
Mulligan, G. W.	Washington	Wilkes	1883
Nisbet, R. B.	Eatonton	Putnam	1853
Pope, J. E.	Athens	Clarke	1876
Wade, R. M	Athens	Clarke	1882
Wirsen, G. F.	Rutledge	Morgan	1871

NINTH DISTRICT.

Bailey, J. M	Gainesville	Hall	1861
Hardman, L. G.	Harmony Grove.	Jackson.	1877
Harris, R. L	Harmony Grove	Jackson	1883
Neal, W. A.	Banksville	Banks	1883
Pendergrass, J. B	Jefferson	Jackson	1883
Watson, W. A.	Jefferson	Jackson	1883

TENTH DISTRICT.

NAME.	POST-OFFICE.	COUNTY.	ADMITTED.
Allen, J. E	Augusta	Richmond	1880
Baker, A. H	Augusta	Richmond	1876
Barnett, J. W	Rayton	Taliaferro	1880
Battey, W. W	Augusta	Richmond	1876
Brantley, S D	Sandersville	Washington	1849
Campbell, A. Sibley (o. s.)	Augusta	Richmond	1876
Campbell, H. F. (o. v-p. p.)	Augusta	Richmond	1851
Campbell Rob't	Augusta	Richmond	1849
Carswell A W	Herndon	Burke	1886
Doughty, W. H. (c.)	Augusta	Richmond	1857
Doughty, W. H. Jr	Augusta	Richmond	1880
Dugas, Geo. C	Augusta	Richmond	1880
Eve J. A. (p)	Augusta	Richmond	1852
Flanders, J W	Wrightsville	Johnson	1884
Ford DeSaussure (v-p. p.)	Augusta	Richmond	1857
Foster, Eugene (v p. c p.)	Augusta	Richmond	1875
Gay, D. E	Herndon	Burke	1875
Gercke, R. O	Augusta	Richmond	1876
Goodrich, E. C. (t.)	Augusta	Richmond	1876
Hatton, Joseph	Groveton	Columbia	1876
Hatch, M. G	Tennille	Washington	1883
Henderson, J. R	Sun Hill	Washington	1884
Hickman C. W	Augusta	Richmond	1880
Hitt, V. G	Augusta	Richmond	1870
Holliday W. Z	Harlem	Columbia	1884
Hull J. M.	Augusta	Richmond	1882
Johnson, H. V	Bartow	Jefferson	1874
Kelley, T. J	Tennille	Washington	1884
Mathis, A. A	Sandersville	Washington	1872
Roberts, J. B	Sandersville	Washington	1875
Smith, Hiram	Augusta	Richmond	1876
Steiner H. H	Augusta	Richmond	1857
Walker, J. L	Wrightsville	Johnson	1884
Whitehead, A. G	Waynesboro	Burke	1869
Wright, J. D	Louisville	Jefferson	1884
Wright, Thos. R	Augusta	Richmond	1856

NON RESIDENTS.

NAME.	POST OFFICE.	COUNTY.	ADMITTED.
Johnson, J. Thad (o. s. p.)	Etna	California	1871
Mitchell, D. L	Cassville	Missouri	1879
Roach, J. E	Sipes Springs	Texas	1882
Shi, A. H	Hawthorn	Florida	1860

In Memoriam.

In Memoriam.

☞ SPECIAL REQUEST TO EVERY MEMBER.—The Secretary *earnestly requests each member of the Association* to aid him *in filling* THE BLANKS in the following Roll of Deceased Members *by making the necessary inquiries* in their respective cities and counties, *and writing him at once* on obtaining the desired information.

NAME.	POST OFFICE.	COUNTY.	ADMITTED.	DIED.
Adams, C. B.	Augusta	Richmond	1868	1875
Alexander, J. R.		Floyd	1849	
Arnold, R. D. (V.-P., P.)	Savannah	Chatham	1849	1876
Avery, J. C.	Decatur	DeKalb	1859	1873
Banks, J. T. (V.-P., P.)	Spalding	Griffin	1858	1880
Barkwell, T. J.	Hawkinsville	Pulaski	1859	
Battle, H. L.	Russellville.	Monroe	1849	
Bell, T. W.	Busbyville..	Houston.	1853	
Bignon, H. A	Augusta..	Richmond	1852	1870
Billing, S. A.	Columbus	Muscogee.	1855	1872
Black, R. C. (T.)	Augusta	Richmond	1852	1860
Bomar, B. F.	Atlanta	Fulton	1859	
Boswell, S. J. (V.-P.)	Columbus	Muscogee..	1855	
Bothwell, D. J	Vienna	Dooly	1849	
Bozeman, J. F.	Atlanta	Fulton	1855	1877
Brandon, D. S.	Thomasville	Thomas	1873	1878
Broadhurst, W. W.	Augusta	Richmond	1852	1861
Bruce, R. J.	Thomasville	Thomas	1874	1880
Bunn, William.	Wilna..	Houston.	1854	
Burgess, William R. (T., O.)	Macon	Bibb	1870	1878
Burney, S. W. (P.)				1876
Carroll, J. C.	Laurens Hill	Laurens.	1857	1870
Carroll, R. C.	Augusta.	Richmond	1873	1882
Castlen, F. G.	Macon	Bibb	1867	1874

NAME.	POST OFFICE.	COUNTY.	ADMITTED.	DIED.
Carlton, J. M	Athens	Clarke	1882	1883
Charters, W. M. (P.)	Savannah	Chatham	1851	1883
Chase, D. S.	Augusta	Richmond	1852	
Clark, S. B.	Richmond Fac'y	Richmond	1852	
Coe, J. N.	Flat Rock	Pike	1856	
Colley, F. S. (P.)	Monroe	Walton	1856	
Cooper, Geo. F. (C-S., V-P.)	Americus	Sumter	1849	1882
Copeland, A. B.	Hamilton	Harris	1878	1882
Cornwall, G. H.	Hillsboro	Jasper	1854	
Crawford, S. S.	Augusta	Richmond	1857	
Crump, E. D.	Herndon	Burke	1872	1881
Cumming, H. M.	Augusta	Richmond	1868	1872
Cunningham, L. S.	Big Creek	Forsyth	1859	1862
Cunningham, W. D.	Jasper	Pickens	1859	1866
D'Alvigney, N.	Atlanta	Fulton	1877	
Davenport, C. W.	Point Peter	Oglethorpe	1852	
Davenport, H. S.	Calhoun	Gordon	1859	
Davis, W. L.	Albany	Dougherty	1849	
Dean, S. H.	Conyers	Rockdale	1856	
Dearing, W. E.	Athens	Clarke	1852	1867
DeCortez, C. A.	Savannah	Chatham	1872	
Dickinson, J. T.	Albany	Dougherty	1857	
Dickinson, R. Q. (V P., P.)	Albany	Dougherty	1850	
Dugas, L. A. (P.)	Augusta	Richmond	1852	1884
Dupree, L. J.	Camilla	Mitchell		
Eve, S. C.	Augusta	Richmond	1868	1884
Felder, W. L.	Augusta	Richmond	1857	1867
Fish, J. D. (T.)	Savannah	Chatham	1875	1879
Ford, L. D.	Augusta	Richmond	1849	1884
Fort, Moses T.	Hawkinsville	Pulaski	1859	1878
Franklin, M. A.	Macon	Bibb	1849	1858
Frasier, W. M.	Hawkinsville	Pulaski	1850	
Gaither, B. T.	Oxford	Newton	1852	1853
Gardner, J. W.	Augusta	Richmond	1857	
Girardey, Edward	Augusta	Richmond	1852	1859
Gordon, J. M.	Savannah	Chatham	1849	
Green, A. B.	Pond Town	Sumter	1849	
Green, H. K.	Macon	Bibb	1849	1867
Green, Thomas F.	Milledgeville	Baldwin	1849	1879

NAME.	POST-OFFICE.	COUNTY.	ADMITTED.	DIED.
Gregory, J. D.		Sumter.	1849	
Grimes, T. W.	Columbus	Muscogee	1855	1882
Habersham, J. C.	Savannah	Chatham	1853	
Habersham, J. C., Jr. (V-P.)	Savannah	Chatham	1866	1881
Habersham, S. E.	Eatonton	Putnam	1870	
Harrell, W. J.	Bainbridge	Decatur	1874	1881
Harris, S. N. (V-P.)	Savannah	Chatham	1851	1854
Harrison, Gabriel	Macon	Bibb		1862
Harriss, Juriah (O., V-P.)	Savannah	Chatham	1852	1876
Hart, A. C.	Waynesboro	Burke	1852	
Hawes, E. C.	Appling	Columbia	1852	
Heard, T. O.	Griffin	Spalding	1867	
Hendrick, J. B.	Covington	Newton	1857	1881
Henry, G. C.	West Point	Troup.	1872	
Hook, E B.	Augusta	Richmond	1857	1862
Hoxey, Thomas	Columbus	Muscogee	1849	1853
Hunter, E. H. W.	Louisville	Jefferson	1857	1883
Ingraham, E. P.	Albany	Dougherty	1870	1873
Irvine, Robert	Augusta	Richmond	1880	1881
Johnson, C. W.	Macon	Bibb	1870	1875
Jones, B. O.	Atlanta	Fulton		
Jones, J. W.	Atlanta	Fulton	1857	1871
Kirksey, E. J, (V-P.)	Columbus	Muscogee	1871	1877
Kollock, P. M. (P.)	Savannah	Chatham	1852	1872
Lamar, T. R. (V-P.)	Macon	Bibb	1849	1859
Lightfoot, W. S.	Macon	Bibb	1849	1864
Lockhart, R. H.	Columbus	Muscogee	1855	1859
Long, Crawford W.	Athens	Clarke	1849	1878
Lumpkin, George	Maxey's Depot	Oglethorpe	1859	
Lumpkin, S. P.	Watkinsville	Clarke	1859	
Mackie, J. D.	Augusta	Richmond	1852	1854
Maffit, R. G. W.	Dalton	Whitfield	1859	
McBride, W. G.	Oconee	Washington	1850	1873
McGoldrick, R.	Macon	Bibb	1849	1853
McKinley, C A.	Newnan	Coweta	1859	
McMillan, J. E.	Columbus	Muscogee	1872	1883
Means, A. (V-P.)	Oxford	Newton	1851	1883
Means, O. S.	Oxford	Newton	1857	
Meiere, William S.	Madison	Morgan	1857	

NAME.	POST OFFICE.	COUNTY.	ADMITTED.	DIED
Milam, R. J	Fairburn	Campbell	1882	1882
Morrison, D. H	Savannah	Chatham	1868	1869
Musgrove, W. C. (C S.)	Midville	Burke	1849	1876
Nash, R. A	Marion	Twiggs	1849	
Nisbet, R. H	Eatonton	Putnam	1854	1873
Nottingham, C. B (S., T., C., P.)	Macon	Bibb	1849	1875
Nunn, R M	Savannah	Chatham	1871	1873
Ogilby, H. J. (V P.)	Madison	Morgan	1849	1873
O'Keeffe, D. C. (S.)	Atlanta	Fulton	1852	1871
Orme, L. H (S.)	Atlanta	Fulton	1866	1872
O'Sullivan, ——	Cork	Lee	1849	
Owen, J. D		Baldwin	1850	
Parsons, J. M	Russellville	Monroe	1849	
Pitts, G. W	Starr	Butts	1859	
Posey, J. F	Savannah	Chatham	1851	
Pringle, W	Covington	Newton		
Ragan, Isham H	Palmyra	Lee	1856	
Raines, Thomas	Atlanta	Fulton	1872	1883
Raines, T. L	Atlanta	Fu ton	1882	1884
Rauschenberg Christian	Atlanta	Fulton	1861	1878
Richardson, C. P	Savannah	Chatham	1851	1853
Ridley, R. A. T. (V-P.)	LaGrange	Troup	1859	1871
Robertson, J. J	Washington	Wilkes	1852	1872
Roddy, R. L. (V-P.)	Forsyth	Monroe	1849	1878
Ruffin, W R	Augusta	Richmond	1852	
Russell, W. J	Lawrenceville	Gwinnett	1861	
Ryan, T. D. L	Hawkinsville	Pulaski	1859	1876
Saffold, S. J	Madison	Morgan	1856	1859
Shropshire, J. W			1871	
Simmons, J. N	Atlanta	Fulton	1850	1871
Simmons, J. S	Gainesville	Hall	1873	1881
Simmons, S. B	Augusta	Richmond	1852	1867
Simmons, T. A	Irwinton	Wilkinson	1871	1872
Smith, A. D	Montezuma	Macon	1871	
Smith, C. W	Jonesboro	Clayton	1859	
Smith, R. M. (C.)	Athens	Clarke		1879
Smith, Thomas	Savannah	Chatham	1858	1876
Spier, W. A	Grantville	Coweta	1859	
Stallings, J. D	Preston	Webster	1871	

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Steele, H	Knoxville	Crawford	1849	
Steele, R. T	Fairburn	Campbell	1849	
Stephens, W. B	Forsyth	Monroe	1849	
Stewardson, Thomas	Savannah	Chatham	1849	
Strozier, L. L	Albany	Dougherty	1867	
Sutton, C. B		Lee	1856	
Taylor, E. T	Columbus	Muscogee	1855	
Taylor, R. N	Hawkinsville	Pulaski	1850	
Thompson, Charles	Macon	Bibb	1849	1854
Trammell, A. A	Forsyth	Monroe	1856	
Underwood, J. B	Cave Spring	Floyd	1860	1881
Van Meter, J. N	Eubarlee	Bartow	1879	1881
Wall, W. W	Calhoun	Gordon	1860	
Ware, A. E. O			1859	
Wells, C. H	Savannah	Chatham	1853	1854
West Charles (P.)	Perry	Houston	1849	
West, C. W	Savannah	Chatham	1853	1859
White, S. G. (V.-P.)	Milledgeville	Baldwin	1868	1877
Whitlock, Isaac W	Washington	Wilkes	1852	1853
Wiley, J. B	Macon	Bibb	1849	
Williams, T. L		Dooly	1849	
Williams, W. L	Fayetteville	Fayette	1873	1878
Willingham, Willis	Lexington	Oglethorpe	1849	1872
Winn, G. A	Bolingbroke	Monroe	1849	1862
Woodson, C. T	Wilna	Houston	1854	
Wooten, W. H	Lexington	Oglethorpe	1852	1860
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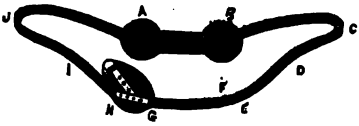

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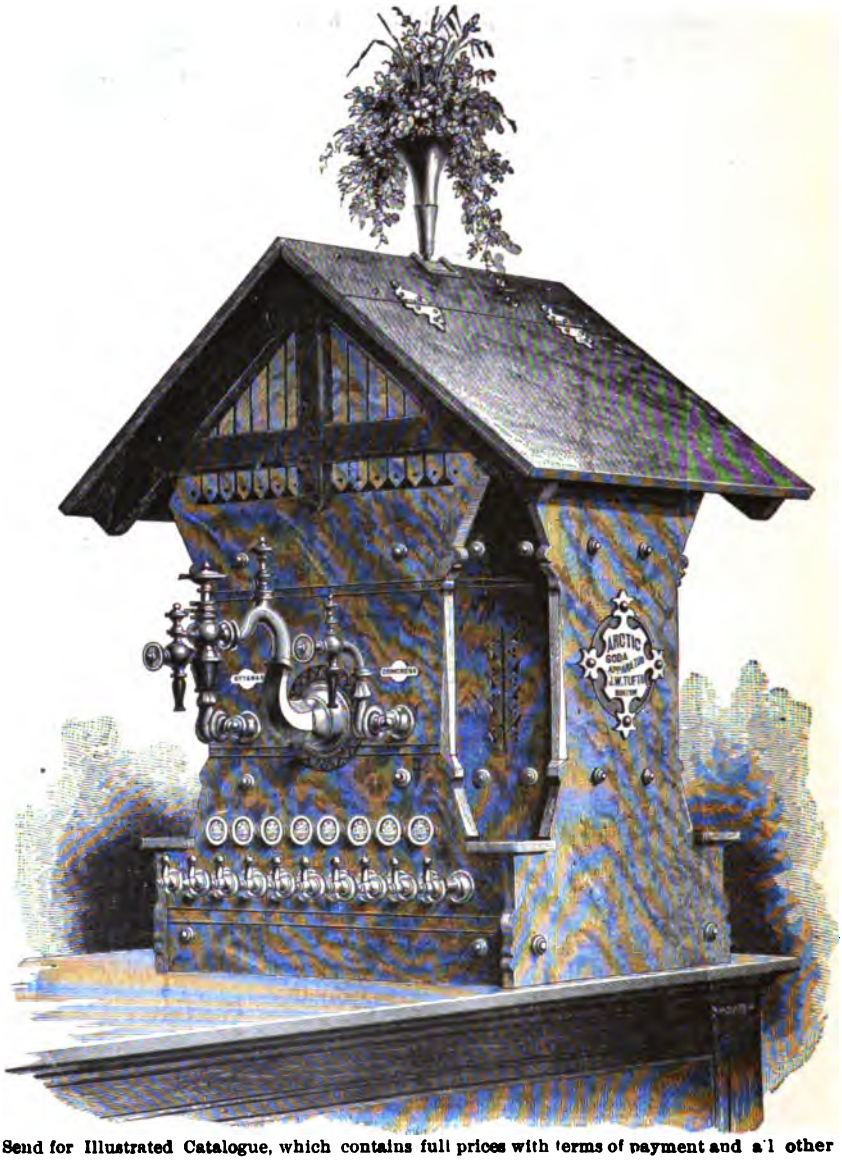

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Fig 5.

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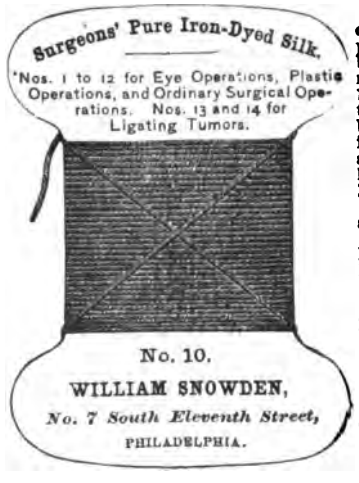
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